

2011

Diagonal Federalism and Climate Change: Implications for the Obama Administration

Hari M. Osofsky
University of Minnesota Law School, hmo8@psu.edu

Follow this and additional works at: https://scholarship.law.umn.edu/faculty_articles



Part of the [Law Commons](#)

Recommended Citation

Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 ALA. L. REV. 237 (2011), available at https://scholarship.law.umn.edu/faculty_articles/189.

This Article is brought to you for free and open access by the University of Minnesota Law School. It has been accepted for inclusion in the Faculty Scholarship collection by an authorized administrator of the Scholarship Repository. For more information, please contact lenzx009@umn.edu.

ALABAMA LAW REVIEW

Volume 62

2011

Number 2

DIAGONAL FEDERALISM AND CLIMATE CHANGE IMPLICATIONS FOR THE OBAMA ADMINISTRATION

*Hari M. Osofsky**

ABSTRACT

The Obama Administration's efforts on climate change continue to face daunting challenges domestically and internationally. This Article makes a

* Associate Professor, University of Minnesota Law School; Associate Director of Law, Geography & Environment, Consortium on Law and Values in Health, Environment & the Life Sciences and Affiliated Faculty, Geography and Conservation Biology, University of Minnesota. I am grateful for thoughtful feedback from Robert Ahdieh, Paul Berman, Rebecca Bratspies, Christopher Bruner, Samuel Calhoun, Robert Danforth, Laura Dickinson, Allan Erbsen, Joshua Fairfield, Sheila Foster, Larry Helfer, Brad Karkkainen, Alice Kaswan, Rick Kirgis, Alexandra Klass, Sarah Krakoff, David Luban, David Millon, Brian Murchison, J.B. Ruhl, Leila Nadya Sadat, Maria Savasta-Kennedy, Joan Shaughnessy, Rodney Smolla, Scott Sundby, Beth Van Schaack, Gregory Shaffer, Melissa Waters, and Robin Wilson on this project. This draft has been greatly enhanced by insights of participants in workshops, conferences, and lectures at Boston College Law School, Florida State University College of Law, Georgetown University School of Law, George Washington University School of Law, Tel Aviv University Faculty of Law, Temple Law School, Tulane University Law School, UC Davis School of Law, University of Colorado Law School, University of Edinburgh School of Law, University of Minnesota Law School, UNC School of Law, University of Oregon School of Law, Villanova University School of Law, Washington and Lee University School of Law, Washington University School of Law, Whittier Law School, William and Mary Law School, and Yale Law School, as well as at the 2010 Association of American Geographers and Association of Law, Property and Society Annual Meetings, and the 2009 International Law Weekend, Law and Society Annual Meeting, and SEALS Conference. I also thank Nicholas Albu, Andrew Atkins, Nicholas Bianchi, Heather Briggs, George Davis, Crystal Doyle, Leigh Anne Faugust, David Gundlach, Christopher Hirsch, Sheri Hiter, Kenzie Johnson, Miles McCoy, Elizabeth Njuguna, Erin Osborne, Elizabeth Petty, Simran Rahi, Jennifer Smyrnos, Efe Ukala, and Stacey Valentine for their very helpful research assistance. Christopher Hirsch, in particular, not only assisted on the research, but also did a wonderful job designing this paper's diagrams. I am grateful for the thoughtful editing and the patience during my constant updates of Editor in Chief Travis Ramey; Executive Editor Jay Saxon; Articles Editors Simon Bailey and Ryan Hodinka; Senior Editor Ann Phelps; and Editors Weathers Bolt, David Gilbert, Patrick Marshall, Jade Sipes, Jeannie Sleadd, Alexa Stabler, Katie Wilson, Mary Wu, and Sarah Yates of the *Alabama Law Review*. This project was made possible through research support from the Francis Lewis Law Center at Washington and Lee University School of Law, where I served as an associate professor from 2008–2010. As always, I tremendously appreciate the love, support, and patience of Josh, Oz, and Scarlet Gitelson.

novel contribution by exploring how the Obama Administration can meet these challenges more effectively through systematically addressing the multiscale character of climate change in the areas where it has greater regulatory control. Mitigating and adapting to climate change pose complex choices at individual, community, local, state, national, and international levels. The Article argues that these choices lead to many diagonal regulatory interactions: that is, dynamics among a wide range of public and private actors which simultaneously cut across levels of government (vertical) and involve multiple actors at each level of government that it includes (horizontal).

After assessing the Obama Administration's progress on climate change and energy issues, this Article develops a theory of diagonal federalism to explore how the Obama Administration might engage in more effective crosscutting regulatory approaches. It proposes a taxonomy for understanding how these diagonal interactions vary across multiple dimensions over time. Specifically, the taxonomy includes four dimensions: (1) scale (large v. small); (2) axis (vertical v. horizontal); (3) hierarchy (top-down v. bottom-up); and (4) cooperativeness (cooperation v. conflict). The Article then applies this taxonomy to the case example of the Obama Administration's efforts at reducing motor vehicle greenhouse gas emissions to demonstrate how it can be used as a tool in policymaking.

The Article argues that existing diagonal efforts to regulate what cars we drive tend to be predominantly large-scale, vertical, and top-down, in line with their direct impact on automobile companies. In contrast, approaches targeting how we drive those cars, which affect those companies less directly and are grounded in land-use planning, are more likely to be small-scale, horizontal, and bottom-up. This divergence creates an opportunity for normative reflection. The Article argues that the Obama Administration should consider whether these skews are appropriate by taking into account the benefits and limitations of such skews in particular contexts. It then proposes ways in which the Administration could create more balance in the dimensions and argues for the value of that balance. Specifically, the Obama Administration could explore additional opportunities for (1) greater smaller-scale governmental involvement in technology-oriented financial incentives programs; (2) federal-level, top-down, vertical initiatives connecting federal approaches to highways, railroads, and gas prices with smaller-scale efforts to have people drive less in their communities; and (3) litigation, which often has a rescaling effect, by interested individuals, nongovernmental organizations, corporations, and government.

ABSTRACT	237
I. INTRODUCTION	239
II. THE OBAMA ADMINISTRATION'S APPROACH TO CLIMATE CHANGE AND ENERGY	243
<i>A. Historical Context for the Obama Administration's Climate Change and Energy Initiatives</i>	246
<i>B. Motor Vehicles Design and Use</i>	248
<i>C. Energy Production and Consumption</i>	253
<i>D. Green Jobs</i>	258
<i>E. Legal Progress through and Limitations of Current Approaches</i>	260
III. TAXONOMY OF DIAGONAL REGULATORY APPROACHES	267
<i>A. Predominant Scale</i>	270
<i>B. Predominant Axis</i>	275
<i>C. Predominant Direction of Hierarchy</i>	280
<i>D. Predominant Level of Cooperativeness</i>	283
IV. IMPLICATIONS FOR THE OBAMA ADMINISTRATION'S APPROACH TO MOTOR VEHICLES GREENHOUSE GAS EMISSIONS	288
<i>A. Technology-Driven Standards and Incentives (Or, What Cars We Drive)</i>	289
<i>B. Land-Use and Transportation Planning (Or, How We Drive Our Cars)</i>	293
<i>C. The Ongoing Role of Litigation</i>	296
V. CONCLUDING REFLECTIONS ON THE VALUE OF MULTIDIMENSIONAL APPROACHES	299

I. INTRODUCTION

The Obama Administration continues to face daunting obstacles to its efforts to address climate change. At an international level, major uncertainty exists about whether a significant agreement including major emitters can emerge from the United Nations Framework Convention on Climate Change (UNFCCC) process. Despite a U.S. President committed to progress, the Copenhagen treaty negotiations resulted in an accord under which all of the key nation-states made commitments contingent upon action by other countries and the Cancun negotiations did little to resolve major remaining questions for the post-Kyoto regime.¹ Cap-and-trade leg-

1. See Copenhagen Accord of Dec. 18, 2009, Decision -/CP.15, available at http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_aup.pdf (last visited Jan. 10, 2011); Guarav Singh, *China, India, Brazil Commit to Make Copenhagen Accord Deadline*, BLOOMBERG, (Jan. 24, 2010), <http://www.bloomberg.com/apps/news?pid=20601090&sid=alXpNdEdnAV4>; *India, China Won't Sign Copenhagen Accord*, THE HINDU, (Jan., 23, 2010), available at <http://beta.thehindu.com/news/national/article93870.ece?homepage=true>; Arthur Max, *Obama Brokers Climate Deal, But Cannot Satisfy All*, USA TODAY, (Dec. 19, 2009), http://www.usatoday.com/weather/climate/globalwarming/2009-12-18-climate-conference-friday_N.htm; Andrew C. Revkin & John M. Broder, *A Grudging Accord in Climate Talks*, N.Y. TIMES, Dec. 20, 2009, at A1, avail-

isolation was declared dead even before the 2010 mid-term elections, leaving the U.S. Environmental Protection Agency (EPA) in the unenviable position of deciding how comprehensively to regulate greenhouse gases under the Clean Air Act (CAA) through its endangerment finding while its actions are challenged in both the courts and Congress.² Even when climate change legislation looked more likely in the initial months of the Obama Administration, polls underscored a lack of public support to make major emissions reductions in the current economic climate.³ In the face of the dim prospects for achieving the reductions needed in time to prevent the worst predicted impacts, increasingly serious conversations regarding the use of geoengineering to reverse climate change are taking place—conversations which raise major concerns about humanity’s ability to intervene in the global ecosystem without terrible unintended consequences.⁴

able at http://www.nytimes.com/2009/12/20/science/earth/20accord.html?_r=1&emc=eta1; Cesare Romano & Elizabeth Burleson, *The Cancún Climate Conference*, 15 ASIL INSIGHT 1, Jan. 21, 2011.

2. See Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66495 (Dec. 15, 2009) (to be codified at 40 C.F.R. ch. 1); John M. Broder, *Greenhouse Gases Imperil Health, EPA Announces*, N.Y. TIMES, Dec. 8, 2009, at A18, available at http://www.nytimes.com/2009/12/08/science/earth/08epa.html?_r=1&emc=eta1.

3. See Gerald F. Seib, *WSJ/NBC Poll: Divided on Warming Threat, Clear on Man’s Role*, WALL ST. J. (Dec. 18, 2009, 7:59 AM), <http://blogs.wsj.com/capitaljournal/2009/12/18/wsjnbc-poll-divided-on-warming-threat-clear-on-mans-role/> tab/ article/ (“A slight majority of Americans—54%—says global warming exists and some action should be taken. That comprises [sic] with 41% who say that more needs to be learned before acting, or that worries are unwarranted. At the beginning of 2007, by contrast, 64% thought warming existed and warranted action, while 33% said more needed to be known before acting.”); Andrew C. Revkin, *Global Warming*, N.Y. TIMES (Dec. 8, 2009) <http://topics.nytimes.com/top/news/science/topics/globalwarming/index.html?scp=1&sq=public%20polls%20for%20emissions%20reductions&st=cse> (“Passionate activists at both ends of the discourse are pushing ever harder for or against rapid action, while polls show the public locked durably in three camps—with roughly a fifth of American voters eager for action, a similar proportion aggressively rejecting projections of catastrophe and most people tuned out or confused.”); accord Ben Geman, *Polls clash over public support for making emissions reductions*, THE HILL (Dec. 23, 2009, 1:30 PM), <http://thehill.com/blogs/e2-wire/677-e2-wire/73473-polls-clash-over-support-for-emissions-limits>.

4. See, e.g., JASON J. BLACKSTOCK ET AL., NOVIM, CLIMATE ENGINEERING RESPONSES TO CLIMATE EMERGENCIES V (2009), available at <http://arxiv.org/pdf/0907.5140>; THE ROYAL SOCIETY, GEOENGINEERING THE CLIMATE: SCIENCE, GOVERNANCE AND UNCERTAINTY (2009); BJØRNAR EGEDE-NISSEN & HENRY DAVID VENEMA, DESPERATE TIMES, DESPERATE MEASURES: ADVANCING THE GEOENGINEERING DEBATE AT THE ARCTIC COUNCIL (2009); NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMIES, GEOLOGICAL AND GEOTECHNICAL ENGINEERING IN THE NEW MILLENNIUM: OPPORTUNITIES FOR RESEARCH AND TECHNOLOGICAL INNOVATION (2006); Albert C. Lin, *Geoengineering Governance*, 8 ISSUES IN LEGAL SCHOLARSHIP Art. 2 (2009); David W. Schnare, Climate Change and the Uncomfortable Middle Ground: The Geoengineering and “No Regrets” Policy Alternative (2008), available at http://www.thomasjeffersoninst.org/pdf/articles/Schnare_speech.pdf; 2009 ESI/MITEI/CGCS Symposium: *Engineering a Cooler Earth: Can We Do It? Should We Try?*, <http://web.mit.edu/esi/symposia/symposium-2009/symposium2009.html> (last visited Jan. 10, 2011); American Enterprise Institute for Public Policy Research, Geoengineering: A Revolutionary Approach to Climate Change (June 3, 2008), <http://www.aei.org/video/100925> (follow link for “Play Full Video”) (last visited Jan. 10, 2011).

Amid those much-publicized challenges, there lurks a structural problem that is arguably as fundamental to effective climate change policy as progress on the treaty regime or national-level legislation. Namely, the Obama Administration must deal with the multiscalar nature of addressing climate change. Emissions, impacts, and adaptation pose regulatory problems that intersect with every level of government, from the most local to the most global.⁵ Yet current approaches to addressing climate change at the international level generally lack efficient ways of creating legal dialogue across levels of government. At the Copenhagen negotiations, for example, national delegations met at a center that ended up being largely closed to the wide range of civil society participants, and meetings of large numbers of subnational states, provinces, and cities from around the world were not integrated into the official dialogue.⁶

This Article proposes that the Obama Administration can address this structural challenge better in its domestic climate change and clean energy initiatives through addressing the “diagonal” quality of its regulatory interactions. Diagonal strategies incorporate key public and private actors at different levels of government (the vertical piece) and within each level of government (the horizontal piece) simultaneously in order to create needed crosscutting interactions. The Article makes an original contribution to the scholarly literatures on climate change and on federalism through its development of a theory of diagonal federalism and application of that theory to the Obama Administration’s current efforts.⁷ The Article provides an in-depth examination of the Obama Administration’s approach to the reduction of motor vehicle greenhouse gas emissions to analyze the nuances of current crosscutting initiatives and provide a model for rethinking their

5. See Hari M. Osofsky, *Is Climate Change “International”? Litigation’s Diagonal Regulatory Role*, 49 VA. J. INT’L L. 585 (2009) [hereinafter Osofsky, *Is Climate Change “International”?*].

6. See John Vidal and Jonathan Watts, *Friends of the Earth among Activists Barred from Copenhagen Conference Centre*, GUARDIAN.CO.UK (Dec. 16, 2009), <http://www.guardian.co.uk/environment/2009/dec/16/friends-of-the-earth-barred-bella-centre>; Press Release, Office of the Governor of California, Gov. Schwarzenegger Announces New Coalition of Subnational Leaders to Combat Climate Change, available at <http://gov38.ca.gov/press-release/14032/>; Michael Gerrard, *Copenhagen Reports December 2009*, CLIMATE LAW BLOG (December 14–20, 2009), <http://blogs.law.columbia.edu/climatechange/2009/12/>. I have analyzed the international legal implications of these subnational meetings in Hari M. Osofsky, *Multiscalar Governance and Climate Change: Reflections on the Role of States and Cities at Copenhagen*, 25 MD. J. INT’L L. 64 (2010) [hereinafter Osofsky, *Multiscalar Governance*].

7. This Article is the first to develop the concept of diagonal federalism in depth. My previous companion article and two others have used the term in passing. See Osofsky, *Is Climate Change “International”?*, *supra* note 5, at 642; Judith Resnik, Joshua Civin & Joseph Frueh, *Ratifying Kyoto at the Local Level: Sovereignism, Federalism, and Translocal Organizations of Government Actors (TOGAS)*, 50 ARIZ. L. REV. 709, 727–28 (2008); Marcia L. McCormick, *Solving the Mystery of How Ex Parte Young Escaped the Federalism Revolution*, 40 U. TOL. L. REV. 909, 924 (2009). Melissa Waters’s introduction of the term “diagonal,” differently defined, in her foreign relations scholarship helped to inspire this project. See Melissa A. Waters, *Diagonal Dialogue: What Administrative Law Deference Frameworks Can Teach Us About Giving “Respectful Consideration” to International Courts* (Feb. 25, 2009) (unpublished manuscript) (on file with author).

appropriateness and effectiveness. It argues that the structural differences between strategies aimed at what cars we drive and those aimed at how we drive those cars, in addition to ongoing litigation, provide opportunities for further policy innovation.

This Article's analysis is grounded in federalism because, within the United States, the federalist structure of the government provides for interaction across governmental levels. As a result, the challenge facing the Obama Administration is how to approach these international-federal-state-local interactions in a fashion that leads to the most effective climate policy. Even a single climate change policy area—such as the example of reducing greenhouse gas emissions from passenger cars on which the Article focuses—contains complex interactions among governmental and non-governmental entities. In the more traditional state-federal context, for instance, conflicts have arisen over who should set tailpipe emissions standards, with auto companies pushing for a uniform national standard and some states, led by California, asserting their right under the CAA to exceed national standards. The Obama Administration attempted to resolve this conflict by granting California's waiver request and by harmonizing state and federal standards so that they converge by 2012.⁸ However, the relevant governmental action on this issue ranges from local and even sublocal land-use planning decisions⁹ to U.S. partnerships with individual

8. For the U.S. EPA's denial of California's waiver request under the Bush administration, see Letter from Stephen L. Johnson, Adm'r, U.S. Env'tl. Prot. Agency, to Arnold Schwarzenegger, Governor of Cal. (Dec. 19, 2007), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epa-letter.pdf [hereinafter "Waiver Denial Letter"]. For California's Petition for Review to the Court of Appeals for the Ninth Circuit following the denial, see Petition for Review of Decision of the United States Environmental Protection Agency, *California v. EPA*, No. 08-70011 (9th Cir. Jan. 2, 2008), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epapetition-1.pdf [hereinafter "Petition for Review"]. For the Obama Administration's granting of the waiver request, see Press Release, U.S. Env'tl. Prot. Agency, EPA Grants California GHG Waiver (June 30, 2009), *available at* <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceeac8525735900400c275e448236de5fb369852575e500568e1b1>; OpenDocument. For the Obama Administration's fuel economy standards, see Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards, 74 Fed. Reg. 24,007 (May 22, 2009); *see also* President Barack Obama, Remarks on National Fuel Efficiency Standards in the Rose Garden (May 19, 2009), *available at* http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-national-fuel-efficiency-standards/.

9. For an exploration of how local land-use planning impacts vehicular mass transit, see Antonio M. Bento et al., *The Impact of Urban Spatial Structure on Travel Demand in the United States*, World Bank Policy Research Working Paper, WPS 3007 (Mar. 2003), *available at* http://www-wds.worldbank.org/external/default/WDSPContentServer/WDSP/IB/2003/04/23/000094946_03040404262857/Rendered/PDF/multi0page.pdf (last visited Jan. 10, 2011). For a report proposing a new model of transportation finance, which takes into account changing approaches to climate change, see NATIONAL SURFACE TRANSPORTATION INFRASTRUCTURE FINANCING COMMISSION, PAYING OUR WAY: A NEW FRAMEWORK FOR TRANSPORTATION FINANCE (Feb. 26, 2009), *available at* http://financecommission.dot.gov/Documents/NSTIF_Commission_Final_Report_Mar09/FNL.pdf (last visited Jan. 10, 2011). For a discussion of the role that the sublocal and individual plays, see *infra* note 154 and accompanying text.

countries and groups of countries on clean transportation.¹⁰ This Article argues that understanding these diverse interactions through the lens of diagonal federalism provides insight into how they might be structured more effectively.

In Part II, the Article provides an assessment of the Obama Administration's approach to climate change and energy law and policy thus far in light of its precommitments and ongoing partisan political battles. Part III builds upon this assessment by engaging the difficulty of crafting needed crosscutting policy approaches. The Part introduces a four-part taxonomy to assist scholars and policymakers with developing and assessing these approaches, and then applies the taxonomy to the Obama Administration's approach to the regulation of motor vehicle greenhouse gas emissions regulation, with an emphasis on the differences between policy approaches to what cars we drive and to how we drive them. These differences raise questions, which Part IV addresses, about how the Obama Administration can be most effective in crafting future diagonal approaches to the reduction of motor vehicle greenhouse gas emissions. The Part explores possibilities for the Obama Administration both to pair large-scale, vertical, top-down approaches with ones that have opposite tendencies along those dimensions and to use litigation to foster multidimensional interactions. The Article concludes by considering the broader implications of this taxonomy. It argues that the taxonomy can serve as a tool not only for practical policy analysis, but also for reconceptualizing scholarly approaches. In so doing, the conclusion frames the next piece in this series of articles on scale, science, law and climate change, which will take a multidimensional law and geography approach to rethinking environmental federalism.¹¹

II. THE OBAMA ADMINISTRATION'S APPROACH TO CLIMATE CHANGE AND ENERGY

President Obama articulated an ambitious agenda for climate change and energy issues in his campaign, and his Administration has made substantial progress in realizing those commitments.¹² However, as discussed in the sections which follow, the Obama Administration's accomplishments are largely concentrated in the actions of multiple federal administrative agencies due to the obstacles it has faced with respect to both legislation and international negotiations. The major exceptions to this rule are

10. See, e.g., Int'l Council on Clean Transp., *Athens Resolution* (Jan. 22, 2010), available at http://www.theicct.org/pubs/Athens_resolution.pdf; Joint Statement by the United States and the Republic of China on Clean Energy, 2009 DAILY COMP. PRES. DOC. 927 (Nov. 17, 2009).

11. See Hari M. Osofsky, *Multidimensional Environmental Federalism: A Law and Geography Approach* (unpublished manuscript) (on file with author) [hereinafter Osofsky, *Multidimensional Environmental Federalism*].

12. See *infra* notes 35–36.

the energy and green growth measures in the American Recovery and Reinvestment Act of 2009 (ARRA), which have been a major component of the Obama Administration's accomplishments on these issues to date.¹³ Moreover, although the Administration has worked closely with key states and localities in many instances, a number of its crucial policies take a fairly traditional, top-down mandate or incentive structure.

The Obama Administration's core commitments with respect to climate change and energy have, from the start, focused on supporting a transformation to a greener economy grounded in formal legal measures. For example, President Obama's State of the Union addresses have consistently touted clean energy initiatives as vehicles for innovation, economic growth, and job creation. His 2010 State of the Union address included the claim that "[e]ven if you doubt the evidence, providing incentives for energy-efficiency and clean energy are the right thing to do for our future, because the nation that leads the clean energy economy will be the nation that leads the global economy. And America must be that nation."¹⁴ His 2011 address took that approach further, omitting references to "climate change" but proposing major clean energy commitments, even in the face of significant mid-term elections losses and a Congress attacking his efforts on climate change.¹⁵ Substantively, that transformation primarily focuses on changing motor vehicle technology and usage patterns, energy sources and efficiency, and the types of jobs which drive the economy. In moving towards its substantive goals through legal action, the Obama Administration's work has included extensive agency action under the ARRA, CAA, and Energy Independence and Security Act of 2007 (EISA); failed efforts to pass a cap-and-trade bill in Congress; and active participation and leadership in international climate negotiations.¹⁶

The Obama Administration has made substantial progress on all of these objectives, although formal legal change outside of its control has been more elusive. For example, EPA Administrator Lisa Jackson's January 12, 2010 memorandum on her first year reflected this progress, the Administration's continuing commitment to these issues, and foreshadowed its ongoing challenges with which her agency continues to grapple.

13. See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 134 (2009).

14. Barack Obama, President of the United States, Address Before a Joint Session of Congress on the State of the Union (Jan. 27, 2010) in DAILY COMP. PRES. DOC. 55 at 5. [hereinafter 2010 State of the Union].

15. The White House, Office of the Press Secretary, Remarks by the President in State of Union Address, United States Capitol, Washington, D.C., Jan. 25, 2011 [hereinafter 2011 State of the Union], available at <http://www.whitehouse.gov/the-press-office/2011/01/25/remarks-president-state-union-address>.

16. See *Energy & Environment*, THE WHITE HOUSE, <http://www.whitehouse.gov/issues/energy-and-environment> (last visited Jan. 10, 2011).

In including “[t]aking action on climate change” among her seven key themes to focus the EPA’s work, she stated:

Last year saw historic progress in the fight against climate change, with a range of greenhouse gas reduction initiatives. We must continue this critical effort and ensure compliance with the law. We will continue to support the President and Congress in enacting clean energy and climate legislation. Using the Clean Air Act, we will finalize our mobile source rules and provide a framework for continued improvements in that sector. We will build on the success of ENERGY STAR to expand cost-saving energy conservation and efficiency programs. And we will continue to develop common-sense solutions for reducing GHG emissions from large stationary sources like power plants. In all of this, we must also recognize that climate change will affect other parts of our core mission, such as protecting air and water quality, and we must include those considerations in our future plans.¹⁷

Administrator Jackson’s six other key themes, many of which have significant overlap with the EPA’s efforts on climate change, included improving air quality; insuring the safety of chemicals; cleaning up our communities; protecting America’s waters; expanding the conversation on environmentalism and working for environmental justice; and building strong state and tribal partnerships.¹⁸

This Part builds from Administrator Jackson’s summary of her agency’s efforts to provide a more in-depth review of the primary elements of the Obama Administration’s efforts on its core climate change and energy commitments and their evolution over time. It does not attempt to list comprehensively every single administration initiative, but rather to give a sense of its major commitments, accomplishments, and challenges. Although the push for cap-and-trade legislation failed, the other aspects of the Obama Administration’s climate change policy that Administrator Jackson highlighted have continued to move forward.

The Part begins by situating the Obama Administration’s work amid efforts to address climate change that predate his administration. It then turns to the Obama Administration’s domestic commitments and efforts in substantive areas detailed above. The Part concludes with a discussion of legal progress and obstacles, including an assessment of its international and subnational efforts and the resulting challenges of legal scale that the Obama Administration faces.

17. See Memorandum from Lisa P. Jackson, Adm’r, EPA to all EPA Employees (Jan. 12, 2010), available at <http://blog.epa.gov/administrator/2010/01/12/seven-priorities-for-epas-future/>.

18. See *id.*

A. Historical Context for the Obama Administration's Climate Change and Energy Initiatives

U.S. legislative efforts at clean air regulation began in 1955 with the Air Pollution Control Act,¹⁹ which was the precursor to the CAA of 1963 and its subsequent variations.²⁰ The CAA, together with the Energy Policy Conservation Act of 1975 (EPCA)²¹ and other clean air legislation,²² has provided the statutory framework for agency action on many key greenhouse gas emissions issues, particularly transportation and energy. Although prior to *Massachusetts v. EPA*,²³ greenhouse gases were not explicitly included in the regulations promulgated under these laws,²⁴ many of these regulations impacted such emissions. For example, the corporate average fuel economy (CAFE) standards mandated fuel economy in vehicles and, as a result, influenced the extent of their emissions.²⁵

In addition to these air pollution control efforts relevant to climate change, the United States has had a statutory regime explicitly focused on climate change since 1978. That year, the National Climate Program Act mandated that the President establish a program to “assist the Nation and the world to understand and respond to natural and man-induced climate processes and their implications.”²⁶ Pursuant to that law, President Carter commissioned a National Research Council report which concluded that “[i]f carbon dioxide continues to increase, the study group finds no reason to doubt that climate changes will result and no reason to believe that these changes will be negligible. . . . A wait-and-see policy may mean waiting until it is too late.”²⁷

19. See Air Pollution Control Act of 1955, Pub. L. No. 84-159, 69 Stat. 322 (codified as amended at 42 U.S.C. §§ 7401-7671q (2006)).

20. See Clean Air Act of 1963, Pub. L. No. 88-206, 77 Stat. 392 (codified as amended at 42 U.S.C. §§ 7401-7671q (2006)).

21. See Energy Policy and Conservation Act of 1975, Pub. L. No. 94-163, §§ 501-512, 89 Stat. 871, 901-16 (codified as amended at 42 U.S.C. § 6201 (2006)).

22. See, e.g., Motor Vehicle Air Pollution Control Act of 1965, Pub. L. No. 89-272, §§ 201-09, 79 Stat. 992, 992-96 (codified as amended at 42 U.S.C. §§ 7521-7590 (2006)); Air Quality Act of 1967, Pub. L. No. 90-148, 81 Stat. 485 (codified as amended at 42 U.S.C. §§ 7401-7671q (2006)).

23. 549 U.S. 497 (2007).

24. See Press Release, U.S. Envtl. Prot. Agency, EPA Denies Petition to Regulate Greenhouse Gas Emissions from Motor Vehicles (Aug. 28, 2003), available at <http://yosemite.epa.gov/opa/admpress.nsf/fb36d84bf0a1390c8525701c005e4918/694c8f3b7c16ff6085256d900065fdad!OpenDocument>.

25. For a discussion of this overlap, see Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards, 74 Fed. Reg. 24,007 (May 22, 2009).

26. National Climate Program Act, Pub. L. No. 95-367, 92 Stat. 601, 601 (codified as amended at 15 U.S.C. §§ 2901-2908 (2006)).

27. CLIMATE RESEARCH BOARD, CARBON DIOXIDE AND CLIMATE: A SCIENTIFIC ASSESSMENT, at viii (National Academy Press 1979), available at http://www.nap.edu/catalog.php?record_id=12181.

In 1987, the Global Climate Protection Act attempted to translate this effort into “coordinated national policy” and U.S. leadership in international efforts to address climate change.²⁸ However, the Act’s goals have yet to be achieved. Numerous bills to address climate change nationally, including the most recent cap-and-trade ones, have stalled in the U.S. Senate, and the country’s pre-Obama leadership on climate change was limited by both the Legislative and Executive branches at critical junctures.²⁹ Although the United States is party to the United Nations Framework Convention on Climate Change (UNFCCC) and President Clinton’s Administration participated actively in the Kyoto Protocol negotiations, the Senate unanimously passed a resolution indicating its sense that the United States should not enter into the Kyoto Protocol because it did not apply to developing major emitters like China and India.³⁰ As a result, President Clinton did not submit the protocol to the Senate for ratification.³¹

Under President George W. Bush’s leadership, the nation backtracked on the issue both domestically and internationally. His Administration repeatedly refused to regulate greenhouse gas emissions under existing environmental laws and prevented leader states from moving ahead with their own regulation of greenhouse gas motor vehicles emissions.³² The 2007

28. Global Climate Protection Act, Pub. L. No. 100-204, §§ 1101–06, 101 Stat. 1331, 1408 (codified as amended at 15 U.S.C. § 2901 (2006)).

29. The one relatively comprehensive climate change cap-and-trade bill to pass in the House, the American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. (2009), has not yet had an analogue passed in the Senate. The Lieberman-Warner Climate Security Act of 2008, S. 3036, 110th Cong. (2008), which was a substitute amendment to America’s Climate Security Act of 2007, S. 2191, 110th Cong. (2007), fell 12 votes short of the 60 votes needed to continue debate. America’s Climate Security Act of 2007, S. 2191, 110th Cong. (2007), made it out of committee and was placed on the calendar in the Senate but never reached a vote. For examples of proposed legislation that died in committee in the Senate or House, see Climate Stewardship Act of 2003, S. 139, 108th Cong. (2003); Climate Stewardship Act of 2004, H.R. 4067, 108th Cong. (2004); Climate Stewardship Act of 2005, H.R. 759, 109th Cong. (2005); Climate Stewardship Act of 2005, S. 342, 109th Cong. (2005); Climate Stewardship and Innovation Act of 2005, S. 1151, 109th Cong. (2005); New Apollo Energy Act of 2005, H.R. 2828, 109th Cong. (2005); Keep America Competitive Global Warming Policy Act of 2006, H.R. 5049, 109th Cong. (2006); Clean Air Planning Act of 2006, S. 2724, 109th Cong. (2006); Safe Climate Act of 2006, H.R. 5642, 109th Cong. (2006); Global Warming Reduction Act of 2006, S. 4039, 109th Cong. (2006); Climate Stewardship and Innovation Act of 2007, S. 280, 110th Cong. (2007); Global Warming Pollution Reduction Act, S. 309, 110th Cong. (2007); Electric Utility Cap and Trade Act of 2007, S. 317, 110th Cong. (2007); Climate Stewardship Act of 2007, H.R. 620, 110th Cong. (2007); Global Warming Reduction Act of 2007, S. 485, 110th Cong. (2007); Safe Climate Act of 2007, H.R. 1590, 110th Cong. (2007); Clean Air Planning Act of 2007, S. 1177, 110th Cong. (2007); Low Carbon Economy Act of 2007, S. 1766, 110th Cong. (2007); Climate Stewardship and Economic Security Act of 2007, H.R. 4226, 110th Cong. (2007); Climate MATTERS (Market, Auction, Trust & Trade Emissions Reduction System) Act of 2008, H.R. 6316, 110th Cong. (2008); Carbon Leakage Prevention Act, H.R. 7146, 110th Cong. (2008).

30. S. Res. 98, 105th Cong. (1997).

31. See SUSAN R. FLETCHER, CONG. RESEARCH SERV., RL 30692, GLOBAL CLIMATE CHANGE: THE KYOTO PROTOCOL 2 (2005), available at <http://fpc.state.gov/documents/organization/43196.pdf>.

32. Editorial, *Arrogance and Warming*, N.Y. TIMES, Dec. 21, 2007, at A38; John M. Broder & Felicity Barringer, *E.P.A. Says 17 States Can’t Set Greenhouse Gas Rules for Cars*, N.Y. TIMES, Dec. 20, 2007, at A1.

EISA, with its many provisions related to climate change, such as stricter CAFE standards that will require automakers to bring fleet-wide gas mileage to thirty-five miles per gallon (mpg) by 2020, constitutes the most significant step taken under the Bush Administration to move federal climate change regulation forward.³³ Internationally, in 2002, President Bush announced the United States' decision not to ratify the Kyoto Protocol and made limited additional commitments on climate change.³⁴ As detailed in the subsequent sections, the Obama Administration's campaign pledges on climate change and energy and its steps thus far on this issue constitute an effort to reverse those policies and to move the United States towards comprehensive domestic action and international leadership.

B. Motor Vehicles Design and Use

During his campaign and since taking office, President Obama's commitments regarding motor vehicles have focused on what cars we drive and the fuels that they use, as well as broader efforts at transportation policy and its impact on how we drive those cars. With respect to what cars we drive, he pledged to raise fuel economy standards by four percent each year and to double the current fuel economy standards within eighteen years.³⁵ He planned to work with Congress to ensure that all new vehicles will have flex-fuel capability by the end of his first term and to invest in advanced vehicle technology that uses lightweight materials and new engines.³⁶ He also proposed to increase the number of hybrids on the road to one million by 2015 and to require that future federal government vehicles be hybrids.³⁷ To support this transition, he stated that he would provide \$4 billion in retooling tax credits and loan guarantees for domestic automakers and that he would lift the cap of \$60,000 per manufacturer on buyer tax credits for ultra-efficient vehicles.³⁸ With respect to fuels, President Obama said that he would require the development of sixty billion gallons of advanced biofuels by 2030 and establish a National Low Carbon Fuel Standard (LCFS) to help with the introduction of nonpetroleum fu-

33. See Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492, 1499 (2007).

34. For President Bush's announcement of the United States decision not to ratify Kyoto, see President George W. Bush, Speech Discussing Global Climate Change (June 11, 2001), available at <http://www.guardian.co.uk/environment/2002/feb/14/usnews.globalwarming>.

35. See *Blueprint For Change*, OBAMA FOR AMERICA, <http://www.barackobama.com/pdf/ObamaBlueprintForChange.pdf>; *Barack Obama's Plan to Make America a Global Energy Leader*, OBAMA FOR AMERICA, http://obama.3cdn.net/4465b108758abf7a42_a3jmvfa5.pdf.

36. See *Barack Obama and Joe Biden: New Energy for America*, OBAMA FOR AMERICA, http://www.barackobama.com/pdf/factsheet_energy_speech_080308.pdf [hereinafter "*New Energy for America*"].

37. See *id.*

38. See *Barack Obama's Plan to Make America a Global Energy Leader*, *supra* note 35; *New Energy for America*, *supra* note 36.

els.³⁹ Finally, he promised to revise the transportation funding process both to encourage states and localities to consider smart growth and energy conservation and to recommit federal resources to public mass transportation projects.⁴⁰

President Obama began to make good on those campaign promises in his first week in office with memoranda to federal agencies on fuel efficiency standards and on California's request for a CAA waiver, which the U.S. EPA ultimately granted.⁴¹ The U.S. EPA has since issued an endangerment finding and taken initial steps under that finding in response to the Supreme Court's opinion in *Massachusetts v. EPA*.⁴² The Administration's most significant accomplishment with respect to motor vehicles and climate change thus far is its National Program for emissions and fuel economy standards for new vehicles, under which the EPA and Department of Transportation promulgated joint rules on fuel economy and tailpipe greenhouse gas emission which were finalized in April 2010.⁴³

Under this plan, which emerged from the Administration's efforts to forge a compromise between automakers⁴⁴ and California,⁴⁵ manufacturers

39. See *Barack Obama's Plan to Make America a Global Energy Leader*, *supra* note 35; *New Energy for America*, *supra* note 36.

40. See *New Energy for America*, *supra* note 36; *Promoting a Healthy Environment*, OBAMA FOR AMERICA, <http://www.barackobama.com/pdf/issues/EnvironmentFactSheet.pdf>.

41. See Memorandum from President Barack Obama to the Secretary of Transportation and the Administrator of the National Highway Traffic Safety Administration, (Jan. 26, 2009), *available at* http://www.whitehouse.gov/the_press_office/Presidential_Memorandum_fuel_economy/; Memorandum from President Barack Obama to the Administrator of the EPA (Jan. 26, 2009), *available at* http://www.whitehouse.gov/the_press_office/Presidential_Memorandum_EPA_Waiver/; Press Release, U.S. Envtl. Prot. Agency, EPA Grants California GHG Waiver (June 30, 2009), *available at* <http://yosemite.epa.gov/opa/admpress.nsf/bd4379a92ceceac8525735900400c27/5e448236de5fb369852575e500568e1b!OpenDocument>.

42. See Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009).

43. See Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule, 75 Fed. Reg. 25,324 (May 7, 2010) [hereinafter "Final Rule"]; Obama, Remarks on National Fuel Efficiency Standards, *supra* note 8.

44. For the reaction of automakers, see Letter from Frederick A. Henderson, CEO of General Motors Corporation, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/gm.pdf>; Letter from Stefan Jacoby, President and CEO of Volkswagen Group of America, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/vw.pdf>; Letter from James E. Lentz, President of Toyota Motor Sales, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/toyota.pdf>; Letter from Dave McCurdy, President and CEO of the Alliance of Automobile Manufacturers, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/alliance-of-automobile.pdf>; Letter from John Mendel, Executive Vice President of Automobile Sales for American Honda Motor Company, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/honda.pdf>; Letter from Alan R. Mulally, President and CEO of Ford, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/ford>

will be allowed “to build a single light-duty national fleet that would satisfy all requirements under both programs and would provide significant reductions in both greenhouse gas emissions and oil consumption.”⁴⁶ The EPA regulations still focus on tailpipe emissions pursuant to the CAA, and the National Highway Traffic Safety Administration (NHTSA) regulations take the form of CAFE standards under the EISA and EPCA. But they are coordinated for the first time out of an understanding that “[t]he close relationship between emissions of CO₂—the most prevalent greenhouse gas emitted by motor vehicles—and fuel consumption, means that the technologies to control CO₂ emissions and to improve fuel economy overlap to a great degree.”⁴⁷ Both agencies will measure compliance based on fleet average performance calculated at the end of each model year.⁴⁸ The government will then issue credits to manufacturers which exceed the fleet average CO₂ or CAFE standard and debits to those which fail to meet the standard.⁴⁹ Manufacturers will be able to use those credits to offset past or future debits, to transfer those credits among the vehicles in its fleet, or to trade/sell them to other companies.⁵⁰

The Obama Administration has built upon this initial step with frequent new rulemaking efforts to address post-2017 model years of light vehicles and emissions from medium and heavy vehicles. In September 2010, the EPA and NHTSA issued a Notice of Intent to begin establishing

.pdf; Letter from Robert L. Nardelli, Chairman and CEO of Chrysler LLC, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 17, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/chrysler.pdf>; Letter from James J. O'Sullivan, President and CEO of Mazda North American Operations, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/mazda.pdf>; Letter from Norbert Reithofer, Chairman of the Board of Management of The BMW Group, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/bmw.pdf>; Letter from Dieter Zetsche, Chairman of the Board of Management of Daimler AG and Head of Mercedes-Benz Cars, and Thomas Weber, Member of the Board of Management, Group Research, and Mercedes-Benz Cars Development, to Raymond H. LaHood, Secretary of Transportation, and Lisa P. Jackson, EPA Administrator, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/daimler.pdf>.

45. For California's pledge to adopt the less stringent federal standards for Model Years (MY) 2012 to 2016, see Letter from Edmund G. Brown, Jr., Attorney General of California, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/calif-atty-general.pdf>; Letter from Mary D. Nichols, Chairman of the California Air Resources Board, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/air-resources-board.pdf>; Letter from Arnold Schwarzenegger, Governor of California, to Lisa P. Jackson, EPA Administrator, and Raymond H. LaHood, Secretary of Transportation, EPA (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/calif-gov.pdf>.

46. Notice of Upcoming Joint Rulemaking to Establish Vehicle GHG Emissions and CAFE Standards, 74 Fed. Reg. 24,007, 24,007 (May 22, 2009).

47. *Id.* at 24,009 n.7.

48. *See id.* at 24,010.

49. *See id.*

50. *See id.*

standards for fuel economy and greenhouse gas emissions for 2017–25 model year light vehicles, which it updated through a supplemental notice in December 2010.⁵¹ In January 2011, the EPA announced, together with the U.S. Department of Transportation and California, further unification of national and California approaches through a single timeframe for proposing those 2017–25 standards.⁵² The two agencies complemented this progress on cars and light trucks with a final rule announced in October 2010 and corrected in December 2010 for medium and heavy duty vehicles. Its Heavy Duty National Program establishes fuel economy and greenhouse emissions standards that it claims have the potential to reduce greenhouse gas emissions by nearly 250 million metric tons over the life of vehicles sold from 2014 to 2018.⁵³

The Obama Administration has supplemented this mandate program with a variety of financial incentives administered through multiple administrative agencies. Under the ARRA, the Administration established the Clean Cities Alternative Fuel and Advanced Technology Vehicles Pilot Program, which invests \$300 million dollars in state and local government efforts to expand their fleets of fuel-efficient vehicles.⁵⁴ The Act also funded a \$2 billion grant program to encourage individuals to build batteries for plug-in hybrids,⁵⁵ and \$187 million (with an additional private cost share of 50%) towards nine projects aimed at improving fuel efficiency in heavy duty trucks and passenger vehicles which the Obama Administration estimates will create over 500 jobs initially and over 6,000 jobs by 2015.⁵⁶ In addition, the DOE is providing up to \$5.5 million in ARRA funding to

51. Notice of Intent, 75 Fed. Reg. 62,739 (Oct. 13, 2010).

52. Press Release, EPA, DOT and California Align Timeframe for Proposing Standards for Next Generation of Clean Cars, Jan. 24, 2011, *available at* <http://yosemite.epa.gov/opa/admpress.nsf/1e5ab1124055f3b28525781f0042ed40/6f34c8d6f2b11e5885257822006f60c0!OpenDocument>.

53. Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, 75 Fed. Reg. 74152 (Nov. 30, 2010). For correction to proposed rules, *see* Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, 75 Fed. Reg. 81952 (Dec. 29, 2010).

54. For vehicles incentives, *see* Advanced Technology Vehicles Manufacturing Incentive Program, 73 Fed. Reg. 66,721 (Nov. 12, 2008) (codified at 10 C.F.R. pt. 611 (2009)); *see also* *Obama Administration Awards First Three Auto Loans for Advanced Technologies to Ford Motor Company, Nissan Motors, and Tesla Motors*, DEPARTMENT OF ENERGY (June 23, 2009), <http://www.energy.gov/news/7544.htm>; *On Earth Day Vice President Biden Announces \$300 Million in Recovery Act Funds for Clean Cities Program*, THE WHITE HOUSE, OFFICE OF THE VICE PRESIDENT (Apr. 22, 2009), *available at* http://www.whitehouse.gov/the_press_office/On-Earth-Day-Vice-President-Biden-Announces-300-Million-in-Recovery-Act-Funds-for-Clean-Cities-Program/.

55. *See* President Barack Obama, Remarks on Clean Energy at Trinity Structural Towers Manufacturing Plant in Newton, Iowa (Apr. 22, 2009), *available at* http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-in-Newton-IA/ [hereinafter “Newton Remarks”]; President Barack Obama, Remarks at The Edison Electric Vehicle Technical Center in Pomona, California (Mar. 19, 2009), *available at* <http://www.whitehouse.gov/the-press-office/remarks-president-edison-electric-vehicle-technical-center> [hereinafter “Edison Remarks”].

56. *See* Press Release, Dep’t of Energy, Secretary Chu Announces \$187 Million to Improve Vehicle Efficiency for Heavy-Duty Trucks and Passenger Vehicles (Jan. 11, 2010), *available at* <http://www.energy.gov/news/8506.htm>.

support the X PRIZE Foundation's competition in which teams design energy efficiency vehicles.⁵⁷

The Obama Administration plans to continue to build on these investments and move towards its goal of having one million electric vehicles on the road by 2015. On January 26, 2011, the day after President Obama's recommitment to his clean energy goals in the State of the Union address, Vice President Biden announced a new, three-part technology vehicle plan that will include support for U.S. electric vehicle manufacturing and adoption. The plan includes replacing the existing tax credit with a point-of-sale consumer rebate, more investments in research and development, and a competitive grant program to encourage communities to establish the infrastructure needed to support electric vehicles.⁵⁸ With respect to fuels, the EPA issued regulations that strengthened the renewable fuel standard originally enacted in 2007. These regulations increase the volume of renewable fuels required to be blended into the nation's gas supply, include diesel fuels, and establish greenhouse gas thresholds for renewable fuel sources to be included.⁵⁹ President Obama also established a Biofuels Interagency Working Group to develop and implement new biofuels technologies⁶⁰ and set aside \$786 million in Recovery funds for biofuels research and development.⁶¹ The Administration has begun dispersing those funds, such as to two biofuels consortia in January 2010 to support their work on algae-based and other advanced biofuels.⁶²

Regarding transportation policy more broadly, the Obama Administration awarded \$8.78 billion in ARRA funds to transit improvements.⁶³ It provided \$100 million of those funds to forty-three subnational transit

57. See Press Release, Dep't of Energy, DOE Awards up to \$5.5 Million for X PRIZE to Promote Clean, Energy Efficient Vehicles (Nov. 2, 2009), available at <http://www.energy.gov/news/8240.htm>.

58. See Press Release, The White House, Vice President Biden Announces Plan to Put One Million Advanced Technology Vehicles on the Road by 2015 (January 26, 2011), <http://www.whitehouse.gov/the-press-office/2011/01/26/vice-president-biden-announces-plan-put-one-million-advanced-technology>. Some have questioned whether adequate demand exists for the Obama administration to reach its goals. Peter Whoriskey, *U.S. Unlikely to Reach Goal of 1 Million Electrics on the Road by 2015, Report Says*, WASH. POST., Feb. 1, 2011, available at <http://www.washingtonpost.com/wp-dyn/content/article/2011/02/01/AR2011020106455.html?sid=ST2011020106520>.

59. Regulation of Fuels and Fuel Additives: Changes to the Renewable Fuel Standard Program, 75 Fed. Reg. 14670 (Mar. 26, 2010).

60. See Memorandum on Biofuels and Rural Economic Development, 74 Fed. Reg. 21,531, 21,531 (May 7, 2009).

61. See *id.*

62. See Press Release, Dep't of Energy, Secretary Chu Announces Nearly \$80 Million Investment for Advanced Biofuels Research and Fueling Infrastructure (January 13, 2010), available at <http://www.energy.gov/news/8519.htm>.

63. Press Release, Federal Transit Administration, U.S. Transportation Secretary LaHood Announces Final Recovery Act Transit Grant (Sep. 29, 2010), available at http://www.fta.dot.gov/news/news_events_12039.html.

agencies to support use of cutting-edge environmental technologies.⁶⁴ The projects funded include Alabama's replacement of gasoline and diesel buses with electric hybrids, Massachusetts's construction of wind energy turbines, and Vancouver, Washington's installation of solar panels at transit facilities.⁶⁵ The Administration committed another \$8 billion in funds under ARRA and an additional \$1 billion per year for five years to create high speed rail lines interconnecting U.S. cities.⁶⁶ To ensure that this rail project results in jobs, the Administration obtained commitments from more than thirty domestic and foreign rail manufacturers and suppliers that they will establish or expand operations in the United States if they are chosen by states or groups to construct these rail lines.⁶⁷ The Administration also established a Livability Initiative, which is administered jointly by the Department of Transportation (DOT), the Department of Housing and Urban Development (HUD), and the EPA.⁶⁸ In its first round of financial incentives under this initiative in December 2009, the Administration announced the availability of \$280 million to support urban circulator projects such as buses, bus facilities, and streetcars.⁶⁹

C. Energy Production and Consumption

President Obama's campaign promises and, since taking office, his work with respect to energy production and consumption have focused on a two-pronged strategy: (1) improvements in efficiency and infrastructure coupled with (2) development of cleaner energy technologies. Regarding his first goal, he pledged during the campaign to reduce electricity demand 15% by 2020 through improving the efficiency of new buildings by 50% and of existing buildings by 25% (with even more ambitious targets for federal buildings).⁷⁰ He stated a longer-term goal of all new buildings being carbon neutral by 2030.⁷¹ To help states and localities achieve greater

64. See Press Release, Dep't of Transp., \$100 Million in Obama Administration Economic Recovery Act Funds Charts New Course for Green Transportation (Sept. 21, 2009), available at <http://www.dot.gov/affairs/2009/fta2209.htm>.

65. See *id.*

66. See Press Release, The White House, President Obama, Vice President Biden to Announce \$8 Billion for High-Speed Rail Projects Across the Country (Jan. 28, 2010), available at <http://www.whitehouse.gov/the-press-office/president-obama-vice-president-biden-announce-8-billion-high-speed-rail-projects-ac>.

67. See Press Release, Dep't of Transp., U.S. Transportation Secretary LaHood Leads Conference on Domestic High-Speed Rail Manufacturing: More Than 30 Companies Commit To Establish or Expand Manufacturing Operations in the United States (Dec. 4, 2009), available at <http://www.dot.gov/affairs/2009/fra0909.htm>.

68. See Press Release, Dep't of Transp., U.S. Transportation Secretary Announces \$280 Million for Streetcars: First Funds for Administration's Livability Initiative Will Create Jobs (Dec. 1, 2009) available at <http://www.dot.gov/affairs/2009/dot18509.htm>.

69. See *id.*

70. See *New Energy for America*, *supra* note 36.

71. See *Promoting a Healthy Environment*, *supra* note 40; *New Energy for America*, *supra* note

building efficiency, he proposed establishing a competitive grant and federal matching program to create incentives for building codes with greater efficiency requirements and increasing federal funds to support the weatherization of at least one million low-income households per year. In addition to these building improvements, President Obama also committed to overhauling appliance efficiency standards.⁷²

With respect to infrastructure, President Obama promised to pursue a transformation of the national utility grid in partnership with states and utilities “to enable a tremendous increase in renewable generation and accommodate 21st century energy requirements, such as reliability, smart metering and distributed storage,” with a particular focus on “the most vulnerable and congested urban and rural areas where significant renewable energy sources are located.”⁷³ He proposed to accomplish this in part through flipping the incentives for utilities from increasing total energy consumption to improving energy efficiency. In addition, he announced plans to establish a Grid Modernization Commission to facilitate adoption of Smart Grid practices across the country, supported through a DOE Smart Grid Investment Matching Grant Program that would reimburse one-fourth of qualifying Smart Grid investments, conduct deployment programs, and create demonstration projects.⁷⁴

The Obama Administration has made significant progress on these efficiency goals. The ARRA provided \$5 billion for low-income weatherization programs (including \$1,500 in tax breaks), \$4.5 billion to green federal buildings, and \$6.3 billion for state and local renewable energy and energy efficiency efforts, which included the \$3.2 billion Energy Efficiency and Conservation Block Grant (EECBG) Program.⁷⁵ The Department of Energy announced in January 2011 that states are at the half-way point of meeting the Obama Administration’s goals for weatherizing low-income homes, with over 300,000 of these homes weatherized thus far. These households are reducing their energy consumption by 35% and saving \$400/year on their heating bills. The Obama Administration claims that the weatherization of 300,000 homes will save \$161 million in energy costs during the first year. The Act also included an \$11 billion investment to update the energy grid.⁷⁶

36.

72. See *Promoting a Healthy Environment*, *supra* note 40; *New Energy for America*, *supra* note 36.

73. *Promoting a Healthy Environment*, *supra* note 40.

74. See *New Energy for America*, *supra* note 36.

75. See Newton Remarks, *supra* note 55; Energy & Environment, *supra* note 16; Energy Efficiency and Conservation Block Grant Program, U.S. DEP’T OF ENERGY, [http:// www.eecbg. energy.gov/ about/ default .html](http://www.eecbg.energy.gov/about/default.html) (last visited Jan. 10, 2011) [hereinafter DOE Block Grant Program].

76. Edison Remarks, *supra* note 55; Newton Remarks, *supra* note 55; President Barack Obama, Remarks on Energy (June 29, 2009), available at [http:// www.whitehouse.gov/ the_ press_ office/ Remarks-by-the-President-on-Energy/](http://www.whitehouse.gov/the_press_office/Remarks-by-the-President-on-Energy/) [hereinafter Energy Remarks].

On the administrative front, the DOE has issued final rules to increase efficiency standards for more than twenty household and commercial products, including kitchen and laundry appliances, water heaters, and light bulbs, and has proposed rules on residential refrigerators and freezers.⁷⁷ The Government Services Administration (GSA) has also established the GreenGov Supply Chain Partnership, in which participating suppliers pledge to report greenhouse gas emissions with the goal of reducing waste and pollution in the federal supply chain.⁷⁸

With respect to the second goal of developing cleaner technologies, President Obama pledged during the campaign to invest \$150 billion over ten years to support advanced energy technologies and to double federal science and research funding for clean energy projects.⁷⁹ He also proposed the establishment of a Clean Technologies Venture Capital Fund that would partner with existing investment funds and the National Laboratories to help move promising technologies from the lab to commercial production. In addition, his plan included establishing a federal grant program that would allocate \$1 billion in federal money per year to the states to support local manufacturers' efforts to modernize and produce new advanced clean technology.⁸⁰

President Obama's campaign commitments in this area emphasized renewable energy in particular. He committed to establishing a renewable portfolio standard that would require 10% of U.S. electricity consumption to be derived from renewable sources—such as solar, wind, and geothermal—by 2012, increasing to 25% by 2025, which he planned to achieve in part by extending the federal Production Tax Credit for five years.⁸¹ He also pledged that at least 30% of the federal government's electricity will come from renewable sources by 2020.⁸² In addition, he committed to incentivizing private sector investment in zero-carbon coal facilities through proposed DOE public-private partnerships to develop five commercial scale coal plants using carbon capture and sequestration technology.⁸³

77. See Energy Conservation Program: Energy Conservation Standards for Residential Refrigerators, Refrigerator-Freezers, and Freezers, 75 Fed. Reg. 59470-01 (Sep. 27, 2010); Press Release, Dep't of Energy, Secretary Chu Announces More Stringent Appliance Standards for Home Water Heaters and Other Heating Products (Apr. 1, 2010), available at <http://www.energy.gov/news/8816.htm>.

78. See Obama Administration Officials Unveil GreenGov Supply Chain Partnership with Industry (Nov. 16, 2010) available at <http://www.gsa.gov/portal/content/203421>.

79. Some of this investment focuses on motor vehicles and fuels, but it also includes a significant focus on energy production and consumption involving power plants. See *New Energy for America*, *supra* note 36; *Promoting a Healthy Environment*, *supra* note 40.

80. See *New Energy for America*, *supra* note 36.

81. See *id.*

82. See *Promoting a Healthy Environment*, *supra* note 40.

83. See *id.*; *New Energy for America*, *supra* note 36.

The Obama Administration has made significant progress on cleaner technology development, primarily through the ARRA paired with DOE efforts, and President Obama recommitted to these goals in his 2011 State of the Union address's proposal that 80% of the nation's energy come from clean sources by 2035.⁸⁴ The ARRA includes a ten-year, \$75 billion commitment to make the Research and Experimentation Tax Credit permanent, and an approximately \$75 billion investment in renewables through allowing wind producers to access the investment tax credit.⁸⁵ The Act also provides for \$39 billion in energy investments at the DOE and \$20 billion in tax incentives for clean energy. These investments include (1) the establishment of an advanced research agency for energy, which will be modeled after the Defense Advanced Research Projects Agency which developed the Internet; (2) support for Energy Frontier Research Centers, which are working to develop improved energy storage, super-efficient engines, and cheaper solar cells; (3) funds for the above-discussed support for battery development; and (4) provision of \$1.2 billion towards research infrastructure in the DOE's national labs.⁸⁶ In addition, the Department of Agriculture is working with dairy farmers on a manure-to-energy initiative.⁸⁷ President Obama's proposed 2012 budget aims to build on these efforts, with its commitment to over \$8 billion clean energy research and development.⁸⁸

The DOI and DOE are working collaboratively to create an offshore wind industry capable of producing 20% of the nation's energy and to support the growth of other renewable energy production. The Department of Interior (DOI) is engaging in a major initiative on the production, development, and delivery of renewable energy pursuant to a Secretarial order. This initiative includes the establishment of an energy and climate

84. 2011 State of the Union, *supra* note 15.

85. See President Barack Obama, Remarks on Investments in Clean Energy and New Technology (Mar. 23, 2009), available at http://www.whitehouse.gov/the_press_office/Remarks-by-The-President-on-Investments-in-Clean-Energy-and-New-Technologies-3-23-09/; Newton Remarks, *supra* note 55; Press Release, The White House, Remarks by the Vice President at an Event Highlighting Off Shore Wind Power and the Administration's Commitment to Building a Clean, Domestic Energy Policy for the 21st Century at The University of Delaware in Newark, Delaware (May 4, 2009), http://www.whitehouse.gov/the_press_office/Remarks-by-the-Vice-President-at-the-University-of-Delaware-Highlighting-Offshore-Wind-Power/.

86. See Press Release, The White House, Fact Sheet: Investing in Our Clean Energy Future (Mar. 23, 2009), available at http://www.whitehouse.gov/the_press_office/Fact-Sheet-Investing-in-Our-Clean-Energy-Future/.

87. See Press Release, U.S. Dep't of Agric., Agriculture Secretary Vilsack, Dairy Producers Sign Historic Agreement to Cut Greenhouse Gas Emissions by 25% by 2020: Memorandum of Understanding Will Promote Innovative Steps to Turn Dairy Waste into Electricity and Reduce Greenhouse Gas Emissions (Dec. 15, 2009), available at <http://www.usda.gov/wps/portal/usda/usdahome?contentidonly=true&contentid=2009/12/0613.xml>.

88. See Heather Zichal, *Keeping America Competitive: Innovation and Clean Energy*, THE WHITE HOUSE BLOG (Jan 31, 2011, 4:01 PM), <http://www.whitehouse.gov/blog/2011/01/31/keeping-america-competitive-innovation-and-clean-energy>.

change task force which is working through each of the bureaus to identify specific zones on public lands appropriate for large-scale production of solar, wind, geothermal, and biomass energy and the expediting of renewable energy project permitting.⁸⁹ The DOI is also focused on expanding renewable energy development on the U.S. Outer Continental Shelf in partnership with relevant states, localities, and tribal governments, exploring carbon storage and sequestration possibilities, and crafting a coordinated strategy to address climate change impacts on land, water, wildlife, cultural heritage, and tribal resources.⁹⁰ The DOI has approved the controversial offshore wind farm off the coast of Cape Cod, nine commercial-scale solar energy projects on solar lands, and other wind and geothermal projects. The DOE and DOE are also in the process of identifying public land suited for large-scale solar energy production, and establishing right-of-way authorization for private developers to allow solar projects to proceed on them.⁹¹

The Obama Administration is pairing these efforts to foster efficiency and renewable energy development with CAA mandates that push major industrial emitters to reduce their greenhouse gas emissions. In February 2010, in response to political pressure regarding the economic impact of planned mandates, the EPA modified its plans to slow down this process,

89. See Press Release, Dep't of Interior, Secretary Salazar Issues Order to Spur Renewable Energy Development on U.S. Public Lands: Energy Zones a Key to New Initiative (Mar. 11, 2009), available at http://www.doi.gov/news/pressreleases/2009_03_11_release.B.cfm; Press Release, Dep't of Interior, Salazar Announces \$305 Million Economic Stimulus Investment through the Bureau of Land Management to Restore Landscapes, Develop Renewable Energy, and Create Jobs (May 2, 2009), available at http://www.doi.gov/news/pressreleases/2009_05_02_release.cfm; Press Release, Dep't of Interior, Secretary Salazar Pledges to Open Four Renewable Energy Permitting Offices, Create Renewable Energy Teams (May 5, 2009), available at http://www.doi.gov/news/pressreleases/2009_05_05_release.cfm.

90. See Press Release, Dep't of Interior, President Obama, Secretary Salazar Announce Framework for Renewable Energy Development on the U.S. Outer Continental Shelf (April 22, 2009), available at http://www.doi.gov/news/pressreleases/2009_04_22_release.B.cfm; Press Release, Dep't of Interior, Secretary Salazar: U.S. Offshore Wind Resources Could Lead America's Clean-Energy Revolution (April 2, 2009), available at http://www.doi.gov/news/pressreleases/2009_04_02_release.cfm; Press Release, Dep't of Interior, New Science Gauges Potential to Store CO₂: Injecting Carbon Dioxide in Rocks Could Mitigate Climate Change Effects (March 16, 2009), available at <http://www.usgs.gov/newsroom/article.asp?ID=2163>; U.S. DEP'T OF INTERIOR, *Climate Change*, <http://www.doi.gov/wharwedo/climate/> (last visited Jan. 10, 2011).

91. See Press Release, Dep't of Interior, Salazar, Chu Announce Next Step in Nation's March toward Renewable Energy (Dec. 16, 2010), available at <http://www.doi.gov/news/pressreleases/Salazar-Chu-Announce-Next-Step-in-Nations-March-toward-Renewable-Energy-Future.cfm>; Notice of Availability of the Draft Programmatic Environmental Impact Statement for Solar Energy Development in Six Southwestern States and Notice of Public Meetings, 75 Fed. Reg. 78980-02 (Dec. 17, 2010); Press Release, Dep't of Interior, Secretary Salazar Approves Ninth Commercial-Scale Solar Energy Project on Western Public Lands (Dec. 20, 2010); Press Release, Dep't of Interior, Interior and Energy Sign MOU to Spur Offshore Renewable Energy Projects (Jun. 29, 2010); Dep't of Energy, Offshore Wind Strategy Rollout: FAQs (2010), http://www.windpoweringamerica.gov/pdfs/offshore/offshore_wind_strategy_faqs.pdf; Press Release, Dep't of the Interior, Secretary Salazar Announces Approval of Cape Wind Energy Project on Outer Continental Shelf off Massachusetts (Apr. 28, 2010).

but maintained a clear commitment to moving ahead. Administrator Jackson indicated that while no stationary source would be required to get a CAA permit for its greenhouse gas emissions in 2010, the EPA would begin to phase in this permitting for large stationary sources in 2011 and for the smallest sources after 2016.⁹² In May 2010, the EPA began this process by issuing a final rule that establishes threshold greenhouse gas permit requirements for new and existing power plants, refineries, and other major industrial emitters under the New Source Review Prevention of Significant Deterioration and Title V. These thresholds help to ensure that only the most significant emitters, which produce 70% of stationary source greenhouse gas emissions, are covered under the rule; they tailor the permitting process to make it appropriate for greenhouse gases and to prevent overburdening smaller emitters and state regulator.⁹³ The EPA engaged in additional rulemaking in December 2010 to refine these requirements further and account for the varying regulatory conditions in different states.⁹⁴ It also announced a settlement of two additional climate change lawsuits that is resulting in the EPA's establishment of a schedule for promulgating National Source Performance Standards for greenhouse gas emissions by power plans and refineries.⁹⁵

D. Green Jobs

Beyond proposing investments in green industry which aim to add jobs to the economy, President Obama's campaign made specific pledges regarding training and transition programs aimed at green jobs.⁹⁶ He promised to incorporate green technologies training, including advanced manufacturing and weatherization training, into federal workforce training programs. He also proposed green jobs programs focused on disconnected and disadvantaged youth and on Veterans.⁹⁷ The Green Job Corps would provide participating youth with service projects focused on improving the energy conservation of homes and other buildings in their communities,

92. See Letter from Lisa P. Jackson, EPA Administrator, to Hon. Jay D. Rockefeller, IV, U.S. Senator (Feb. 22, 2010), available at <http://media.washingtonpost.com/wp-srv/special/climate-change/documents/post-carbon/022210-adm-letter.pdf>.

93. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514 (June 3, 2010), available at <http://www.gpo.gov/fdsys/pkg/FR-2010-06-03/pdf/2010-11974.pdf#page=1>.

94. U.S. EPA, Clean Air Act Permitting for Greenhouse Gas Emissions—Final Rules, Fact Sheet, Dec. 23, 2010, available at <http://www.epa.gov/NSR/ghgdocs/20101223factsheet.pdf>.

95. See Press Release, EPA to Set Modest Pace for Greenhouse Gas Standards (Dec. 23, 2010), available at <http://yosemite.epa.gov/opa/admpress.nsf/6424ac1c-aa800aab8-5257359-003f5337/d2f038e9-daed78de-85257802-00568bec!OpenDocument>.

96. See *New Energy for America*, *supra* note 36; *Promoting a Healthy Environment*, *supra* note 40.

97. See *New Energy for America*, *supra* note 36; *Promoting a Healthy Environment*, *supra* note 40.

involve private sector employers and unions in establishing apprenticeship opportunities, and work with the proposed Energy Corps to help participants find postprogram jobs.⁹⁸ The Green Vet Initiative would provide counseling and job placement, as well as work with industry partners to create career opportunities and educational programs in this area.⁹⁹

President Obama continues to promote job creation through clean energy, including in his 2011 State of the Union address, and has worked to operationalize that commitment.¹⁰⁰ The White House announced in January 2010 that ARRA's clean energy provisions have already saved or created 63,000 jobs.¹⁰¹ Much debate (often partisan) is taking place about how successful job creation has been and the limits on the Obama Administration's capacity to create clean energy jobs without greater Congressional support. However, a February 2011 report that breaks down and totals "green job" creation by sector estimates that 997,000 total jobs had been created by these ARRA initiatives by the end of 2010.¹⁰²

Under ARRA, the Obama Administration has invested \$600 million in these green job training programs,¹⁰³ including Department of Labor grants of \$150 million through a Pathways Out of Poverty effort targeting disadvantaged populations, of which nearly \$55 million specifically targeted underserved communities and \$28 million focused on communities impacted by auto industry restructuring.¹⁰⁴ These jobs provide opportuni-

98. See *Promoting a Healthy Environment*, *supra* note 40.

99. See *New Energy for America*, *supra* note 365.

100. See 2011 State of the Union, *supra* note 15; Jesse Lee, *Winning the Future Through Innovation and "Better Buildings"*, THE WHITE HOUSE BLOG (Feb. 3, 2011, 5:47 PM), <http://www.whitehouse.gov/blog/2011/02/03/winning-future-through-innovation-and-better-buildings>.

101. See Heather Zichel, *Progress on Green Jobs from the Recovery Act*, WHITE HOUSE BLOG (Jan. 14, 2010, 3:31 PM), <http://www.whitehouse.gov/blog/2010/01/14/progress-green-jobs-recovery-act>.

102. For that report, see Jason Walsh, Josh Bivens and Ethan Pollack, *Rebuilding Green The American Recovery and Reinvestment Act and the Green Economy* 19, Feb. 2011 (report by BlueGreen Alliance and Economic Policy Institute), available at <http://www.bluegreenalliance.org/admin/publications/files/BGA-EPI-Report-vFINAL-MEDIA.pdf>. For media commentary on the debates over green job creation, see, for example, Cynthia Gordy, *The Root: Trying To Find Those Rumored Green Jobs*, NPR, Feb. 4, 2011, available at <http://www.npr.org/2011/02/04/133491234/the-root-trying-to-find-the-rumored-green-jobs> (exploring how executive-legislative dynamics impact green job creation); Patrice Hill, *"Green" Jobs No Longer Golden in Stimulus*, WASH. TIMES, Sept. 9, 2010, <http://www.washingtontimes.com/news/2010/sep/9/green-jobs-no-longer-golden-in-stimulus/?page=1> (arguing (before the most recent Obama initiatives on green jobs) that the green jobs programs have not been successful and are no longer a priority).

103. See *Energy & Environment*, *supra* note 16.

104. See Secretary Hilda Solis, *Green Jobs Grants, Seizing the Opportunity of a Clean Energy Economy*, WHITE HOUSE BLOG (Nov. 18, 2009, 5:24 PM), <http://www.whitehouse.gov/blog/2009/11/18/green-jobs-grants>; Press Release, U.S. Dep't of Labor, U.S. Department of Labor announces \$150 million in 'Pathways Out of Poverty' training grants for green jobs (January 13, 2010), available at http://www.dol.gov/opa/media/press/eta/eta2010_0039.htm; Press Release, U.S. Dep't of Labor, U.S. Department of Labor announces \$100 million in green jobs training grants through Recovery Act (Jan. 6, 2010), available at http://www.dol.gov/opa/media/press/eta/eta2009_1526.htm; Press Release, U.S. Dep't of Labor, U.S. Department of Labor announces nearly \$55 million in green jobs training grants through Recovery Act (Nov. 18, 2009), available at http://www.dol.gov/opa/media/press/eta/eta2009_1526.htm.

ties for skilled laborers to install efficient heating and cooling systems and windows, to retrofit homes to make them more energy efficient, and to build and install solar panels, wind turbines, and other clean energy technology.¹⁰⁵ The weatherization programs in particular are employing 15,000 workers nation-wide.¹⁰⁶

In addition, on January 8, 2010, President Obama announced a clean manufacturing initiative, which awards \$2.3 billion in tax credits to U.S. manufacturers of clean energy technologies such as wind turbines, solar panels, and innovative batteries. He predicted that this initiative would generate 17,000 jobs directly, and tens of thousands additional jobs through the roughly \$5 billion more that the Administration plans to leverage in the private sector investments.¹⁰⁷

Finally, a number of federal agencies have been directly involved in the creation of jobs connected to the Obama Administration's climate change initiatives. For example, the GSA sustainability initiative hired 500 business and created jobs in all 50 states.¹⁰⁸ The Department of Commerce aims to create jobs in clean energy and technology by eliminating export barriers, accelerating patent applications, and providing grants to support renewable energy, energy efficiency, and environmentally sound building projects.¹⁰⁹

E. Legal Progress through and Limitations of Current Approaches

As the above Subparts make clear, President Obama has accomplished a great deal thus far on climate change and energy through a combination of ARRA funding measures and administrative action. In addition to the agency efforts described above, the Securities and Exchange Commission, which is an agency structured to be bipartisan and independent but which is often influenced by the Administration appointing its commissioners, voted in January 2010 to provide public companies with interpretive guidance on disclosing the business and legal impact of climate change as part of their mandatory disclosures.¹¹⁰

www.dol.gov/opa/media/press/eta/eta20091439.htm.

105. See *id.*

106. See Major New Recovery Act Milestone: 300,000 Homes Weatherized (Jan. 18, 2011) available at http://apps1.eere.energy.gov/news/daily.cfm/hp_news_id=282.

107. See President Barack Obama, Remarks on Jobs and Clean Energy Investments (Jan. 8, 2010), available at <http://www.whitehouse.gov/the-press-office/remarks-president-jobs-and-clean-energy-investments>.

108. See Leading By Example: the Federal Government's Sustainable Future (Jan. 20, 2011) available at <http://www.whitehouse.gov/blog/2011/01/20/leading-example-federal-governments-sustainable-future>.

109. See Secretary Gary Locke, *Empowering American Clean Energy and Efficiency Businesses*, White House Blog (Jan. 28, 2010, 3:30 PM), <http://www.whitehouse.gov/blog/2011/01/28/empowering-american-clean-energy-and-efficiency-businesses>.

110. See Press Release, Sec. & Exch. Comm'n, SEC Issues Interpretive Guidance on Disclosure

However, the Obama Administration's progress has been limited significantly by his inability to achieve two major legislative and treaty goals. On the legislative front, President Obama pledged during his campaign to support an economy-wide cap-and-trade system to reduce carbon emissions by 80% by 2050.¹¹¹ Although his Administration has made many efforts to get this legislation through since taking office, the failure to achieve that goal combined with the mid-term elections shifted the focus to broader energy legislation and questions about the extent to which the upcoming annual U.S. government budgets would support clean energy initiatives.¹¹²

Regarding international efforts, President Obama's campaign promised to reverse the Bush Administration's approach, and specifically to re-engage with the U.N. Framework Convention on Climate Change efforts and to invigorate the Major Economies effort. His campaign also proposed the creation of a Global Energy Forum comprised of the world's most significant developed and developing energy consuming nations, following the G8+5 model, to complement the UNFCCC process.¹¹³ President Obama's campaign further proposed domestic efforts to assist with global emissions reduction, such as the establishment of a DOE Technology Transfer Program focused on exporting energy efficient technologies to developing countries and greater emphasis on sustainable forest management.¹¹⁴

The Obama Administration thus far has constructively engaged with the UNFCCC process, as promised, but unfortunately, its leadership has not resulted in significant progress in the negotiations. While President Obama's efforts at the Copenhagen meeting helped lead to the Copenhagen Accord, which averted major failure, the state parties only took note of the accord, rather than adopting it, and the agreement's voluntary commitments represent a quite limited step forward.¹¹⁵ Those limitations have been highlighted by commitments under the Accord which are generally contingent on action by other nations, and in the case of the United States,

Related to Business or Legal Developments Regarding Climate Change, (Jan. 27, 2010), *available at* <http://www.sec.gov/news/press/2010/2010-15.htm>; *see also* LOUIS LOSS & JOEL SELIGMAN, FUNDAMENTALS OF SECURITIES REGULATION 68 (5th ed. 2004) ("In the nature of the American political system, the Commission is perhaps more independent of both branches when the Administration party does not control Congress.").

111. *See* Promoting a Healthy Environment, *supra* note 40; New Energy for America, *supra* note 36.

112. For examples of these budget dialogues, *see* President Obama's proposed 2011 budget, OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2011 (2010), and the negotiation between rival bills that took place in House and Senate. *See* Carl Hulse, Rival Bills to Keep the Government Running Fail in the Senate, NY TIMES, Mar. 19, 2011, http://www.nytimes.com/2011/03/10/us/politics/10congress.html?_r=1&ref=politics.

113. *See* Promoting a Healthy Environment, *supra* note 40.

114. *See id.*; New Energy for America, *supra* note 36.

115. *See supra* note 1 and accompanying text.

also contingent on federal legislation passing.¹¹⁶ Moreover, when Yvo de Boer resigned in February 2010 as Executive Secretary of the UNFCCC following the Copenhagen negotiations, a move that reportedly arose from his frustrations with the slow pace and difficulties of nation-state negotiations, he highlighted his belief that “while governments provide the necessary policy framework, the real solutions must come from business.”¹¹⁷ The United States also participated constructively in the Cancun negotiations, where many fewer heads of state were present, but those negotiations merely resulted in limited progress in operationalizing commitments on discrete issues.¹¹⁸

The Obama Administration has made additional progress, however, through other international efforts. In July 2009, President Obama convened the Major Economies Forum on Energy and Climate, as promised, which resulted in a declaration of shared values and goals.¹¹⁹ President Obama also met with the G-8 in July 2009 to address the “interlinked challenges of the economic crisis, trade, climate change, and development.”¹²⁰ In addition, the United States spearheaded a September 2009 agreement among the G-20 countries to phase out fossil fuel subsidies, which the partially overlapping Asian-Pacific Economic Cooperation (APEC) countries also agreed to in November 2009.¹²¹ In November 2010, the G-20 countries recommitted to that phase out, which some of them have already begun taking steps to achieve.¹²²

The Obama Administration also has been involved in numerous multilateral efforts on more specific issues, such as the greening of motor vehi-

116. See United Nations Framework Convention on Climate Change, Information provided by Annex I Parties relating to Appendix I of the Copenhagen Accord, <http://unfccc.int/home/items/5262.php> (last visited Jan. 10, 2011).

117. Press Release, UNFCCC, Executive Secretary Leaves United Nations Framework Convention on Climate Change Secretariat (Feb. 18, 2010), available at http://unfccc.int/files/press/newsroom/press_releases_and_advisories/application/pdf/pr_2010_0218_ydboer.pdf. For an example of media reactions, see, e.g., Editorial, *Climate Change*, N.Y. Times, FEB. 22, 2010, at A18, available at <http://www.nytimes.com/2010/02/22/opinion/22mon1.html>.

118. See Romano & Bursleson, *supra* note 1.

119. See Press Release, White House Office of the Press Secretary, Declaration of the Leaders: The Major Economies Forum on Energy and Climate (July 9, 2009), available at http://www.whitehouse.gov/the_press_office/Declaration-of-the-Leaders-the-Major-Economies-Forum-on-Energy-and-Climate/; Press Release, White House Office of the Press Secretary, Meeting the International Clean Energy and Climate Change Challenges (July 9, 2009), available at http://www.whitehouse.gov/the_press_office/Fact-Sheet-Meeting-the-International-Clean-Energy-and-Climate-Change-Challenges/.

120. Press Release, White House Office of the Press Secretary, Fact Sheet: On G-8 Global Issues (July 8, 2009), available at http://www.whitehouse.gov/the_press_office/FACT-SHEET-On-G-8-Global-Issues/.

121. See COUNCIL OF ECON. ADVISERS, EXEC. OFFICE OF THE PRESIDENT, 2010 ECON. REPORT OF THE PRESIDENT 257 (2010), available at <http://www.whitehouse.gov/sites/default/files/microsites/economic-report-president.pdf>.

122. See Press Release, The White House Office of the Press Secretary, G-20: Fact Sheet on Energy Issues, Nov. 12, 2010, available at <http://www.whitehouse.gov/the-press-office/2010/11/12/g-20-fact-sheet-energy-issues>.

cles on which this Article focuses. These targeted efforts, many of which predate the Obama Administration, function separately from, but in tandem with, the international climate regime and other international agreements on climate change. For example, the United States has long engaged in information exchange through a number of multilateral initiatives under the International Energy Agency, an international organization that serves as an energy advisor to twenty-eight member countries, and has implemented agreements on advanced fuel cells, advanced materials for transportation, advanced motor fuels, and hybrid and electric vehicles.¹²³ Similarly, the United States participates in the International Council on Clean Transportation (ICCT), which was formed in 2010 and includes thirty regulators and policymakers from the ten largest motor vehicle markets, together representing 85% of the world's total new car and truck sales. In January 2010, the ICCT passed the Athens Resolution, a document that focused not only on motor vehicle technology, but also on changing the ways in which vehicles are used, with a specific focus on land-use planning.¹²⁴ In March 2011, the United States joined the International Renewable Energy Agency, which works to promote increased adoption and development of renewable energy technologies.¹²⁵

This region of the world also has made new agreements on climate change since President Obama took office. In April 2009, the Fifth Summit of the Americas established the Energy and Climate Partnership of the Americas, which encourages multi-country initiatives on these issues. The United States has contributed over \$60 million to this partnership thus far.¹²⁶ The United States, Canada, and Mexico then issued the North American Leaders' Declaration on Climate Change and Clean Energy in August 2009. This tri-lateral agreement includes exchanging information on mitigation and adaptation, creating common goals, and collaborating in the development of low-carbon energy infrastructure and multi-level adaptation planning.¹²⁷

123. See *About the IEA*, INTERNATIONAL ENERGY AGENCY, <http://www.iea.org/about/index.asp> (last visited Jan. 10, 2011); *Advanced Fuel Cells*, INTERNATIONAL ENERGY AGENCY, http://www.iea.org/techno/iaresults.asp?id_ia=1 (last visited Jan. 10, 2011); *Advanced Materials for Transportation*, INTERNATIONAL ENERGY AGENCY, http://www.iea.org/techno/iaresults.asp?id_ia=2 (last visited Jan. 10, 2011); *Advanced Motor Fuels*, INTERNATIONAL ENERGY AGENCY, http://www.iea.org/techno/iaresults.asp?id_ia=3 (last visited Jan. 10, 2011); *Implementing Agreement on Hybrid and Electric Vehicles*, INTERNATIONAL ENERGY AGENCY, <http://www.ieahev.org/about.html> (last visited Jan. 10, 2011).

124. See *Athens Resolution*, *supra* note 10.

125. See Press Release, Dept. of State office of the Spokesman, The United States Joins the International Renewable Energy Agency (IRENA) (Mar. 4, 2011, available at <http://www.state.gov/r/pa/prs/ps/2011/03/157728.htm>); *Vision and Mission of the IRENA*, International Renewable Energy Agency, available at http://www.irena.org/DocumentDownloads/aboutIrena/IRENA_VisionandMission_Ansichtsexemplar.pdf (last visited Mar. 10, 2011).

126. See *ECPA Status Report*, U.S. DEPT. OF ENERGY, U.S. DEPT. OF STATE, 2 (Feb. 2011), available at http://www.ecpamerica.org/files/news/ECPA_Status_Report_20110201_eng.pdf.

127. See Press Release, White House Office of the Press Secretary, North American Leaders'

The Obama Administration has supplemented these multilateral regional agreements with bilateral agreements with Mexico and Canada. In April 2009, President Obama agreed upon a Bilateral Framework on Clean Energy and Climate Change with Mexico which focuses upon “renewable energy, energy efficiency, adaptation, market mechanisms, forestry and land use, green jobs, low carbon energy technology development and capacity building.”¹²⁸ The framework also builds upon cooperation in the border region by promoting efforts to reduce greenhouse gas emissions and to adapt to the impact of climate change locally.¹²⁹ In addition, it works to “strengthen the reliability and flow of cross border electricity grids and [to facilitate] the ability of neighboring border states to work together to strengthen energy trade.”¹³⁰ The United States and Canada established the U.S.-Canada Clean Energy Dialogue in February 2009, which focuses on developing more efficient cross-border energy networks, expanding clean energy research and development, and developing and deploying carbon capture and storage technology.¹³¹

The United States has entered additional bilateral climate change and clean energy agreements under President Obama with developing country major emitters. For example, in November 2009, the United States and China launched a U.S.-China Electric Vehicles Initiative which includes demonstration projects in more than twelve cities, and in January 2011, Presidents Obama and Hu Jintao announced plans for a \$150 million joint research center on clean energy.¹³² The United States and India established a Green Partnership in November 2009, which provides for greater bilateral cooperation on clean energy, climate change, and food security. The partnership also strengthens and expands the country’s preexisting U.S.-India Partnership to Advance Clean Energy, which among other initia-

Declaration on Climate Change and Clean Energy (Aug. 10, 2009), *available at* http://www.whitehouse.gov/the_press_office/North-American-Leaders-Declaration-on-Climate-Change-and-Clean-Energy/.

128. Press Release, White House Office of the Press Secretary, U.S.-Mexico Announce Bilateral Framework on Clean Energy and Climate Change, Apr. 16, 2009, *available at* http://www.whitehouse.gov/the_press_office/US-Mexico-Announce-Bilateral-Framework-on-Clean-Energy-and-Climate-Change/.

129. *See id.*

130. *Id.*

131. *See* Steven Chu, U.S. Secretary of Energy & Peter Kent, Canada Minister of the Environment, *U.S. – Canada Clean Energy Dialogue Second Report to the President of the United States of American and the Prime Minister of Canada* (2011), *available at* http://www.pi.energy.gov/documents/CED_Report_to_Leaders.pdf.

132. *See* Press Release, White House Office of the Press Secretary, U.S.-China Clean Energy Announcements (Nov. 17, 2009), *available at* <http://www.whitehouse.gov/the-press-office/2009/11/17/us-china-clean-energy-announcements>; US-China Clean Energy Cooperation: From Laboratory to Livable Cities, Jan. 18, 2011, *available at* <http://blog.energy.gov/blog/2011/01/18/us-china-energy-cooperation-laboratory-livable-cities>; U.S. Dept. of Energy, U.S.-China Clean Energy Cooperation: A Progress Report by the U.S. Department of Energy, Jan. 2011, *available at* <http://www.pi.energy.gov/documents/USChinaCleanEnergy.PDF>.

tives, includes a public-private effort between U.S. and Indian companies to improve commercial building efficiency.¹³³ In November 2010, the United States and Indonesia expanded their partnership to address climate change and energy issues, with commitments to collaborating on renewable energy development, climate change monitoring, adaptation, and mitigation. As part of these commitments, the United States committed \$136 million to reducing deforestation threats and promoting marine ecosystem adaptation.¹³⁴ In addition to making progress with these developing country major emitters, the United States signed a March 2011 memorandum of understanding with Poland regarding collaboration on clean energy technology.¹³⁵

Although the Obama Administration's relationships with smaller-scale entities, like cities, states, regions, and tribes, have gone more smoothly than its legislative and UNFCCC treaty efforts, they also pose significant challenges for comprehensive climate change policy. The Obama Administration has established innovative cooperative interactions with states and cities, as well as key corporate actors, to make policy progress. The process it used to craft the National Program on motor vehicles greenhouse gas emissions is emblematic of this approach; the Administration engaged both subnational actors and relevant corporations in its decision-making process and, through that inclusion, reached a compromise standard.¹³⁶ The EPA likewise has created a clean energy leadership group, which includes key state regulators and corporate executives, to develop a National Action Plan for Energy Efficiency. That group is identifying barriers to energy efficiency and working to remove them, with the goal of cost-effective energy efficiency by 2025.¹³⁷

Although these efforts represent an important inclusion of key public and private actors, their results often take the form of traditional, top-down mandates with greater buy-in. For example, in the motor vehicles context, the National Program, while developed in an innovative fashion,

133. See Press Release, The White House Office of the Press Secretary, Fact Sheet: U.S.-India Green Partnership to Address Energy Security, Climate Change, and Food Security, Nov. 24, 2009, available at <http://www.asiapacificpartnership.org/english/faq.aspx>; Fact Sheet on U.S.-India Partnership on Clean Energy, Energy Security, and Climate Change, http://www.whitehouse.gov/sites/default/files/india-factsheets/Fact_Sheet_on_U.S.-India_Partnership_on_Clean_Energy_Energy_Security.pdf (last visited Mar. 10, 2011).

134. See Press Release, The White House Office of the Press Secretary, U.S.-Indonesia Partnership on Climate Change and Clean Energy (Nov. 9, 2010), available at <http://www.america.gov/st/texttrans-english/2010/November/20101109180315su0.9502614.html>.

135. See Press Release, Dep't of State Office of the Spokesman, United States-Poland Memorandum of Understanding on Cooperation in Clean and Efficient Energy (Mar. 3, 2011), available at <http://www.state.gov/r/pa/prs/ps/2011/03/157600.htm>.

136. See Waiver Denial Letter, *supra* note 8 and accompanying text.

137. See *National Action Plan for Energy Efficiency*, U.S. ENVTL. PROT. AGENCY, <http://www.epa.gov/cleanenergy/energy-programs/suca/resources.html> (last visited Jan. 10, 2011).

contains mandates that these actors have to follow.¹³⁸ Similarly, cities, states, and tribes have participated in the Obama Administration's dynamic green growth incentive programs largely through trying to get their proposals accepted so that the money flows to them.¹³⁹ Moreover, the extensive efforts by national and international coalitions of localities, states, and provinces are often not integrated into those of the nation-states. As noted above, for example, subnational governments, including many in the United States, met at Copenhagen, but separately from the main meetings, forming agreements that were not coordinated with the Copenhagen Accord.¹⁴⁰ Within the United States, smaller-scale coalitions abound, particularly with respect to land-use planning aimed at reducing emissions from motor vehicles and from energy production and consumption, but their efforts often remain separate from the Obama Administration's national-level initiatives described above.¹⁴¹

The complex interactions between and among governments around the world at an international level, other branches of government at a national level, and multiple governmental entities at subnational levels—all of which also interact with nongovernmental organizations, corporations, international organizations, and private individuals—pose an ongoing governance challenge for the Obama Administration.¹⁴² It has effectively used the entities under its control, as well as the recovery-focused legislation which made it through Congress early in its administration, but its overall progress on the problem depends on its ongoing strategies for dealing with these many interested actors. Although some of these strategies will simply involve navigating difficult politics, the Administration also needs a more effective ongoing approach for addressing these complexities of multiscalar governance. The Parts that follow explore these issues in depth.

138. See *supra* note 8 and accompanying text.

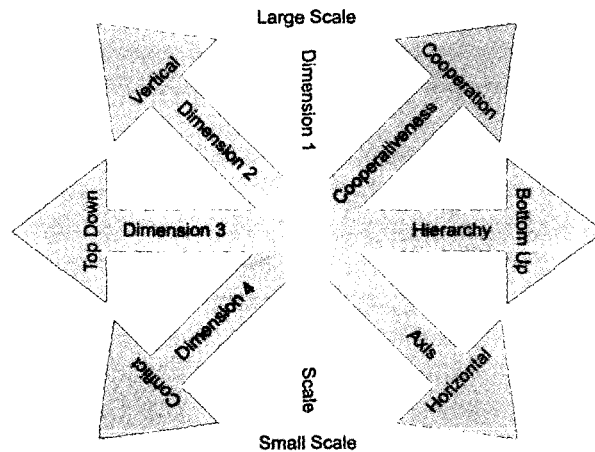
139. For information on block grants to smaller-scale governments, see U.S. Dep't of Energy, *Energy Efficiency and Conservation Block Grant Program*, U.S. DEP'T OF ENERGY, <http://www.eecbg.energy.gov/> (last visited Jan. 10, 2011); see also Evan Lehmann, *Cities Rush to Turn "Green" with 3.2 Billion of Federal Green*, N.Y. TIMES, June 2, 2009, available at <http://www.nytimes.com/cwire/2009/06/02/02climate-wire-cities-rush-to-turn-green-with-32-billion-of-84057.html> (last visited Jan. 10, 2011).

140. See *supra* note 6 and accompanying text.

141. For examples of the many municipal initiatives taking place, see the compilation provided by Columbia Law School, *Municipal Climate Change Laws Resource Center*, CENTER FOR CLIMATE CHANGE LAW, <http://www.law.columbia.edu/centers/climate-change/resources/municipal>.

142. I traced these dilemmas of scale with respect to climate change in Osofsky, *Is Climate Change "International"?*, *supra* note 5. For a thoughtful exploration of complex scale issues that arise with respect to international and transnational environmental problems more broadly, which includes analysis of climate change as a global-global problem, see Bradley Karkkainen, *Marine Ecosystem Management & a "Post-Sovereign" Transboundary Governance*, 6 SAN DIEGO INT'L L.J. 113 (2004).

III. TAXONOMY OF DIAGONAL REGULATORY APPROACHES



This Part proposes a taxonomy for understanding and crafting diagonal regulatory approaches as strategies to engage the multiscale nature of climate change law and policy described in Part II. These crosscutting strategies take a wide variety of forms, and this taxonomy provides a lens through which this variation among approaches over time can be better understood. Specifically, the Part considers four dimensions in which diagonal regulation can vary: (1) scale (large v. small); (2) axis (horizontal v. vertical); (3) hierarchy (top-down v. bottom-up); and (4) cooperativeness (cooperation v. conflict). It looks at the nature, as well as advantages and disadvantages, of approaches that are skewed with respect to one or more of these dimensions.

The Part focuses on these particular dimensions as core ways in which diagonal approaches converge and diverge. The first dimension, scale, captures the way in which climate change law spans interacting levels of government, and provides an opportunity for considering the varying roles that entities at different levels play. The second dimension, axis, engages the diagonal interaction itself, and the ways in which horizontal or vertical interactions predominate many regulatory schemes. The third dimension, hierarchy, considers the direction of the vertical interactions, and the extent to which the smaller-scale or larger-scale actors drive the dynamics. Finally, the fourth dimension, cooperativeness, analyzes the mix of cooperative and conflictual behavior taking place within existing diagonal regulatory schemes.

In highlighting these aspects of diagonal regulatory approaches, the taxonomy contributes to a law and geography understanding of climate change regulation; specifically, it serves as a tool for mapping changing dynamics over time. Such a map is first and foremost quite literal. One can spatialize diagonal dynamics by plotting the interactions and their evolution on a four-dimensional grid which includes the above elements. But the taxonomy also provides a more conceptual map of crosscutting regulation by identifying overlapping but distinct categories which interact to create diagonal strategies. This framing moves beyond simply acknowledging simultaneous vertical and horizontal dynamics to treating those dynamics as multidimensional.¹⁴³

In so doing, the taxonomy builds upon my preceding companion piece, *Is Climate Change International?: Litigation's Diagonal Regulatory Role*.¹⁴⁴ In that article, I argue for climate change as a multiscalar regulatory problem and analyze climate change litigation as debating the appropriate scale for regulation. Based on the consistent dynamics in that litigation, the article draws from transnational legal process¹⁴⁵ and geographic network theory,¹⁴⁶ with additional grounding in dynamic federalism¹⁴⁷ and new governance theory,¹⁴⁸ to begin to sketch a vision for diagonal regula-

143. I have explored the complexities of what "space" means in previous work. See, e.g., Hari M. Osofsky, *The Geography of Justice Wormholes: Dilemmas from Property and Criminal Law*, 53 Vill. L. Rev. 117 (2008). For geography literature analyzing the concept of "space," see DOREEN B. MASSEY, *FOR SPACE* 62-104 (2005); YI-FU TUAN, *SPACE AND PLACE: THE PERSPECTIVE OF EXPERIENCE* 6 (1977); Helen Couclelis, *Location, Place, Region, and Space*, in *GEOGRAPHY'S INNER WORLDS: PERVERSIVE THEMES IN CONTEMPORARY AMERICAN GEOGRAPHY* 215, 215 (Ronald F. Abler et al. eds., 1992); Michael R. Curry, *On Space and Spatial Practice in Contemporary Geography*, in *CONCEPTS IN HUMAN GEOGRAPHY* 3, 3-32 (Carville Earle et al. eds., 1996).

144. See Osofsky, "Is Climate Change International?", *supra* note 5.

145. See Harold Hongju Koh, *Why Transnational Law Matters*, 24 PENN ST. INT'L L. REV. 745 (2006); Harold Hongju Koh, *Jefferson Memorial Lecture: Transnational Legal Process After September 11th*, 22 BERKELEY J. INT'L L. 337, 339 (2004); Harold Hongju Koh, *Why Do Nations Obey International Law?*, 106 YALE L.J. 2599 (1997); Harold Hongju Koh, *Transnational Legal Process*, 75 NEB. L. REV. 181 (1996).

146. The preceding companion article primarily draws from the work of Kevin Cox. See Kevin R. Cox, *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, or: Looking for Local Politics*, 17 POL. GEOGRAPHY 1 (1998). For analyses of Cox's approach, see Katherine T. Jones, *Scale as Epistemology*, 17 POL. GEOGRAPHY 25 (1998); Dennis R. Judd, *The Case of the Missing Scales: A Commentary on Cox*, 17 POL. GEOGRAPHY 29 (1998); Michael Peter Smith, *Looking for the Global Spaces in Local Politics*, 17 POL. GEOGRAPHY 35 (1998); Kevin R. Cox, *Representation and Power in the Politics of Scale*, 17 POL. GEOGRAPHY 41 (1998); Lynn A. Staeheli, *Globalization and the Scales of Citizenship*, 19 GEOGRAPHY RES. F. 60 (1999).

147. For further discussion of dynamic federalism, see *infra* notes 153-59, 172-73, 197-201, 222-228 & 268-69.

148. J.B. Ruhl and James Salzman are integrating new governance with dynamic federalism and transgovernmental network theory in an environmental context. See J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CAL. L. REV. 59 (2010). For broader new governance analyses, see LAW AND NEW GOVERNANCE IN THE EU AND US (Gráinne de Búrca & Joanne Scott eds., Hart Publ'g 2006); Bradley C. Karkkainen, "New Governance" in *Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping*, 89 MINN. L. REV. 471 (2004); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342 (2004);

tory thinking which integrates the complex set of scales and actors that effective climate regulation demands.¹⁴⁹ That piece does not yet, however, delve deeply into what operationalizing diagonal approaches would entail in a broader climate change policy context.

This Article's multidimensional approach provides that fuller framework and practical application, which together have the potential to help scholars and policymakers think through these problems better. The following two Parts illustrate the value of the taxonomy in evaluating regulatory approaches to climate change policy. Specifically, the taxonomy provides a mechanism for rethinking current approaches and assessing whether they are structured in an appropriate fashion.

The taxonomy also has broader conceptual value in helping to reframe the environmental federalism literature, a topic which is beyond the scope of this Article but which will be the focus of my next article in this series. Namely, as discussed in the Conclusion, the four dimensions of the taxonomy also represent four areas of debate within the federalism literature, and breaking down the scholarly debates in this way provides a means for assessing them and reconstituting them.¹⁵⁰

For the purposes of this Article, I argue that the taxonomy can serve as a tool for the Obama Administration to rethink its multiscalar regulatory approaches to climate change and energy. To that end, this Part and the one that follows use the example of motor vehicle greenhouse gas emissions regulation to demonstrate how the taxonomy can assist in breaking down regulatory interactions in order to map possibilities for future policy steps. This Part, in particular, builds upon Part II's overview of the Obama Administration's approach to climate change and energy policy by focusing on one of that policy's three prongs—motor vehicle greenhouse gas emissions reduction—and situating the Administration's initiatives in the broader context of smaller-scale and nongovernmental efforts. This Part argues that current approaches to what cars we drive align differently within the four dimensions than current approaches to how we drive those cars. These differences provide opportunities to evaluate the appropriateness of current and potential diagonal approaches, an evaluation that is the focus of Part IV.

Orly Lobel, *Setting the Agenda for New Governance Research*, 89 MINN. L. REV. 498 (2004).

149. The discourse over how the European Union does and should apply principles of subsidiarity to climate change regulation contains significant parallels to discussion over environmental federalism in the United States. A full exposition of subsidiarity and climate change is beyond the scope of this paper. For a comparative analysis of U.S. and E.U. approaches to climate change, see Jutta Brunée, *Europe, the United States, and the Global Climate Regime: All Together Now?*, 24 J. LAND USE & ENVTL. L. 1 (2008); cf. Michael G. Faure & Jason Scott Johnston, *The Law and Economics of Environmental Federalism: Europe and the United States Compared*, 27 VA. ENVTL. L.J. 205 (2009); Alfred R. Light, *Environmental Federalism in the United States and the European Union: A Harmonic Convergence?*, 15 ST. THOMAS L. REV. 321 (2002).

150. See *infra* Part V; Osofsky, *Multidimensional Environmental Federalism*, *supra* note 11.

A. *Predominant Scale*

Small Scale

Dimension 1: Scale

Large Scale

Existing diagonal approaches to motor vehicle emissions regulation tend to skew towards the large- or small-scale regulatory levels. The large-scale versions involve regulatory arrangements dominated by international or national actors, while the small-scale versions focus on subnational actors. The Obama Administration's efforts to improve upon motor vehicle technology and fuels (what cars we drive) tend to be predominantly large-scale. For example, the Obama Administration's National Program to address greenhouse gas emissions and fuel economy in new vehicles through joint agency rulemaking is predominantly large-scale (federal), although it exists in coordination with state motor vehicle emissions regulations, specifically aiming to harmonize over time with California's more stringent approach.¹⁵¹ In contrast, although its broader transportation policy is also generated at the federal level, the Obama Administration's initiatives form a much smaller portion of efforts to address the way in which cars are driven. State and local land-use planning dominate those efforts. Specifically, coalitions of states and cities focused on reducing vehicle miles traveled through local land-use planning work primarily at smaller-scales, but are in dialogue with federal vehicle miles traveled reduction efforts, especially through lobbying the federal government and responding to its financial incentive programs.¹⁵²

151. See Letter from Mary D. Nichols, Chairman of the Cal. Air Resources Bd., to Lisa P. Jackson, EPA Admin., and Raymond H. LaHood, Sec'y of Transp. (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/air-resources-board.pdf>; Letter from Arnold Schwarzenegger, Governor of Cal., to Lisa P. Jackson, EPA Admin., and Raymond H. LaHood, Sec'y of Transp. (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/calif-gov.pdf>; Letter from Edmund G. Brown, Jr., Att'y Gen. of Cal., to Lisa P. Jackson, EPA Admin., and Raymond H. LaHood, Sec'y of Transp. (May 18, 2009), *available at* <http://www.epa.gov/otaq/climate/regulations/calif-atty-general.pdf>. See also *supra* note 52 and accompanying text.

152. For example, the U.S. Conference of Mayors, which is collaborating among its members on climate change and transportation, is also urging the federal government, specifically the President and Congress, to empower localities, presumably through legislative and administrative provisions, to help determine federal energy resource allocation. Manuel A. (Manny) Diaz, President, United States Conference of Mayors, *National Action Agenda on Environment and Energy for the Next President of the United States* (Oct. 2, 2008), *available at* http://www.usmayors.org/maf/documents/2009_0105-Environment.pdf [hereinafter *Open Letter*].

Dynamic environmental federalism scholarship analyzes a number of issues that arise in this first dimension of scale. Some of this literature focuses on how to incorporate the smallest or largest levels of governance into the traditional federal-state conversation. In the climate change context, the smaller-scale conversation typically focuses on how subnational entities, such as cities or states, should be integrated into national and international management of the problem. Kirsten Engel, David Hodas, Alice Kaswan, and Barry Rabe, for instance, are among the scholars who have explored questions of state and local climate change regulation as part of dynamic federalism analyses.¹⁵³ Sarah Krakoff has looked even smaller, to consider sublocal activities, and Michael Vandenbergh, Jack Barkenbus, and Jonathan Gilligan even smaller than that, to focus on multiscalar regulatory actions directed at individuals and households.¹⁵⁴ The larger-scale conversation, on the other hand, generally analyzes how federalism schemes should take globalization into account. Tseming Yang and Robert Percival, as well as Robert Ahdieh, among many others, have grappled with these questions in different variations.¹⁵⁵

Some scholars have also examined the full range of the scale issue. For instance, Judith Resnik's work has analyzed the way in which the local and international interact in a climate change federalism model.¹⁵⁶

153. For some of this work in particular, see, e.g., Kirsten Engel, *State and Local Climate Change Initiatives: What is Motivating State and Local Governments to Address a Global Problem and What Does This Say About Federalism and Environmental Law?*, 38 URB. LAW. 1015 (2006) [hereinafter Engel, *State and Local*]; David E. Adelman & Kirsten H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 ARIZ. L. REV. 835 (2008); David R. Hodas, *State Law Responses to Global Warming: Is It Constitutional to Think Globally and Act Locally?*, 21 PACE ENVTL. L. REV. 53 (2003); Alice Kaswan, *Climate Change, Consumption, and Cities*, 36 FORDHAM URB. L.J. 253 (2009) [hereinafter Kaswan, *Climate Change, Consumption, and Cities*]; Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39 (2007); BARRY G. RABE, *STATEHOUSE AND GREENHOUSE: THE EMERGING POLITICS OF AMERICAN CLIMATE CHANGE POLICY* 1-37 (2003); Barry G. Rabe, *North American Federalism and Climate Change Policy: American State and Canadian Provincial Policy Development*, 14 WIDENER L.J. 121, 128-51 (2004). For an interesting compilation of pieces on federalism and local government, see *DILEMMAS OF SCALE IN AMERICA'S FEDERAL DEMOCRACY* (Martha Derthick ed., 1999).

154. See Sarah Krakoff, *Environmental Law, Tragedy and Community* (draft manuscript on file with author); Michael P. Vandenbergh, Jack Barkenbus, & Jonathan Gilligan, *Individual Carbon Emissions: The Low-Hanging Fruit*, 55 UCLA L. REV. 1701 (2008);

155. See Robert B. Ahdieh, *Foreign Affairs, International Law, and the New Federalism: Lessons from Coordination*, 73 MO. L. REV. 1185 (2008); Robert B. Ahdieh, *Dialectical Regulation*, 38 CONN. L. REV. 863 (2006); Robert B. Ahdieh, *From Federalism to Intersystemic Governance: The Changing Nature of Modern Jurisdiction*, 57 EMORY L.J. 1 (2007); Tseming Yang & Robert V. Percival, *The Emergence of Global Environmental Law*, 36 ECOLOGY L.Q. 615 (2009); see also Joseph W. Dellapenna, *Law in a Shrinking World: The Interaction of Science and Technology with International Law*, 88 KY. L.J. 809 (2000).

156. See Judith Resnik, *Law's Migration: American Exceptionalism, Silent Dialogues, and Federalism's Multiple Ports of Entry*, 115 YALE L.J. 1564 (2006) [hereinafter Resnik, *Law's Migration*]; Resnik, Civin & Frueh, *supra* note 7. The American Society of International Law also had a broader panel on this topic in 2008. See Robert B. Ahdieh et al., *When Subnational Meets International: The Politics and Place of Cities, States, and Provinces in the World*, 102 AM. SOC'Y INT'L L. PROC. 339

Douglas Kysar and Bernadette Meyler have used California's internationalist approach to climate change as a lens through which to examine constitutional limits on state foreign affairs activities.¹⁵⁷ Dan Farber has argued for a bifurcated approach to the constitutional authority of states to allow for more effective multiscale climate change regulation,¹⁵⁸ and Richard Stewart has argued for a plural architecture for climate regulation that allows for multiple regulatory systems.¹⁵⁹ Together, this scholarship makes the important contribution of reinforcing the way in which an expanded scalar dialogue, which ranges from the individual to the international, enriches the federalism conversation, especially for problems like climate change that interact at every level.

The Obama Administration's process for developing its greenhouse gas motor vehicles emissions regulation involves the broad scalar range described in this dynamic environmental federalism scholarship. Although the Obama Administration's efforts on motor vehicle emissions tend to be predominantly federal, the extent of the skew evolves over time through the Administration's interactions with key actors at multiple scales. For instance, although Obama's National Program is a predominantly large-scale effort to set motor vehicle tailpipe emissions, it emerged in the context of the dispute between the Bush Administration and the states wishing to follow California's heightened emissions standards. These states have been the primary regulatory drivers with respect to motor vehicle greenhouse gas emissions, and even with the harmonization under the Obama Administration's plan, California and the states following its approach will exceed federal standards for a period of time. Thus, the standards will become increasingly large-scale as the federal government and leader states harmonize over the next few years.¹⁶⁰

Predominantly large-scale regulatory strategies have the advantages of creating uniformity and of catering to widespread presumptions about the appropriate scale for climate regulation. As I have discussed in depth in the preceding companion article, those seeking to block smaller-scale climate regulation often argue that climate change is a global problem requiring large-scale solutions.¹⁶¹ Diagonal approaches dominated by nation-

(2008).

157. See Douglas A. Kysar & Bernadette A. Meyler, *Like a Nation State*, 55 UCLA L. REV. 1621 (2008).

158. See Daniel A. Farber, *Climate Change, Federalism, and the Constitution*, 50 ARIZ. L. REV. 879 (2008).

159. See Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 ARIZ. L. REV. 681 (2008).

160. See *supra* note 52 and accompanying text.

161. See Osofsky, *Is Climate Change "International"?*, *supra* note 5; see also, e.g., Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. PA. L. REV. 1961, 1962 (2007) (arguing that "subnational state-level action is not the best way to combat global climate change").

states and international entities would be more likely to satisfy those who view that level of regulation as more appropriate, and, as a result, may face less opposition. The automobile manufacturers' willingness to sign on to and to continue to support the further development of the Obama Administration's National Program for motor vehicles emissions exemplifies this phenomenon, as they would prefer to have a uniform, national standard for their industry rather than state-by-state variation.¹⁶² Moreover, additional large-scale efforts would fit the scale of the Obama Administration's current and planned efforts on climate change, many of which focus on the federal or international scale. For instance, the Obama Administration's efforts at climate change treaty negotiations, involvement in international agreements on green motor vehicle technology and transportation, frequent presidential and agency actions, and support for legislation largely occur at the national or international level.¹⁶³

At the other end of the scale spectrum, because a number of U.S. states and cities have been well ahead of federal regulatory efforts, especially during the Bush Administration, coalitions exist to expand predominantly small-scale diagonal regulation that includes these states and cities as leaders, especially with respect to how motor vehicles are driven. Many states and localities have been collaborating nationally and internationally, which creates opportunities for them to connect their efforts to larger-scale actors in a more diagonal structure.¹⁶⁴ For instance, the U.S. Conference

162. See Press Release, Alliance of Automobile Manufacturers, *Automakers Comment on Notes of Intent to Propose 2017-2025 Fuel Economy/Greenhouse Gas Regulations* (Oct. 29, 2010), available at <http://www.autoalliance.org/index.cfm?objectid=62A583D2-E399-11DF-A62C00-0C296BA163>; Press Release, Alliance of Automobile Manufacturers, *Automakers and Federal Government Agree on Next Steps for Long-Term GHG/Fuel Economy Program* (May 21, 2010), available at <http://www.autoalliance.org/index.cfm?objectid=7B28B4AE-6764-11DF-A6D8000C-296BA163> (explaining that long-range regulations are important to manufacturers, as automobile development requires 5-10 years of lead-time); Press Release, Association of Global Automakers, *Stanton Calls for Coordinated Regulatory Processes to Encourage Efficiencies* (Jan. 27, 2011), available at <http://www.globalautomakers.org/media/press-release/2011/01/stanton-calls-for-coordinated-regulatory-processes-to-encourage-efficiency>.

163. For a discussion of the scale of current Obama Administration efforts, see *supra* Part II.E.

164. See, e.g., ICLEI Global, *About CCP*, <http://www.iclei.org/index.php?id=811> (last visited Jan. 10, 2011) (describing an international collaboration of cities on climate change). For a discussion of local climate initiatives, see, e.g., Carolyn Kousky & Stephen H. Schneider, *Global Climate Policy: Will Cities Lead the Way?*, 3 CLIMATE POL'Y 1, 11 (2003); Janet Koven Levit, *Bottom-Up International Lawmaking: Reflections on the New Haven School of International Law*, 32 YALE J. INT'L L. 393, 402-04 (2007); Resnik, *Law's Migration*, *supra* note 156, at 1627-33; Resnik, *Civin & Frueh*, *supra* note 7. See also Randall S. Abate, *Kyoto or Not, Here We Come: The Promise and Perils of the Piecemeal Approach to Climate Change Regulation in the United States*, 15 CORNELL J.L. & PUB. POL'Y 369 (2006); Donald A. Brown, *Thinking Globally and Acting Locally: The Emergence of Global Environmental Problems and the Critical Need to Develop Sustainable Development Programs at State and Local Levels in the United States*, 5 DICK. J. ENVTL. L. & POL'Y 175 (1996); Ann E. Carlson, *Implementing Greenhouse Gas Emissions Caps: A Case Study of the Los Angeles Department of Water and Power*, 55 UCLA L. REV. 1479 (2008); Engel, *State and Local*, *supra* note 153; Robert B. McKinstry, Jr., *Laboratories for Local Solutions for Global Problems: State, Local and Private Leadership in Developing Strategies to Mitigate the Causes and Effects of Climate Change*, 12 PENN ST. ENVTL. L. REV. 15 (2004); Hari M. Osofsky, *Climate Change Litigation as Pluralist Legal Dia-*

of Mayors has urged the federal government to “empower local elected officials, especially in metropolitan areas, to make the decisions on how federal transportation resources are invested, a shift this [sic] is especially crucial to change energy demand and greenhouse gas emissions in this sector.”¹⁶⁵

The existence of active small-scale governmental initiatives, however, also poses a challenge for the Obama Administration. As the Administration augments national and international efforts, questions have and will consistently arise about whether these new developments should preempt state and local law and policy.¹⁶⁶ Although thus far the Obama Administration appears to recognize the value of limiting preemption¹⁶⁷ and supporting ongoing small-scale efforts—such as in the President’s rapid steps to have the EPA reconsider and then reverse California’s CAA waiver denial while harmonizing federal and California motor vehicle greenhouse gas emissions standards¹⁶⁸—President Obama himself has acknowledged a concern about the piecemeal nature of the smaller-scale regulation implemented prior to effective federal action in that context.¹⁶⁹ Unless the Ad-

logue?, 26A STAN. ENVTL. L.J. 181 (2007); Osofsky, *Is Climate Change “International”?*, *supra* note 5; Hari M. Osofsky, *Local Approaches to Transnational Corporate Responsibility: Mapping the Role of Subnational Climate Change Litigation*, 20 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 143 (2007); Hari M. Osofsky & Janet Koven Levit, *The Scale of Networks?: Local Climate Change Coalitions*, 8 CHI. J. INT’L L. 409 (2008); Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 ARIZ. L. REV. 681 (2008); Katherine Trisolini & Jonathan Zasloff, *Cities, Land Use, and the Global Commons: Genesis and the Urban Politics of Climate Change*, in ADJUDICATING CLIMATE CHANGE: STATE, NATIONAL, AND INTERNATIONAL APPROACHES 72 (William C.G. Burns & Hari M. Osofsky eds., 2009), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1267314; Laura Kosloff & Mark Trexler, *State Climate Change Initiatives: Think Locally, Act Globally*, 18 NAT. RESOURCES & ENV’T 46 (2004); William Andreen et al., *Cooperative Federalism and Climate Change: Why Federal, State, and Local Governments Must Continue to Partner*, CENTER FOR PROGRESSIVE REFORM (May 29, 2008), http://progressive.regulation.org/articles/Cooperative_Federalism_and_Climate_Change.pdf; Kaswan, *Climate Change, Consumption, and Cities*, *supra* note 153.

165. *Open Letter*, *supra* note 152. Such pushes have also taken place in the clean energy context. See, e.g., Position Paper, Clean Energy States Alliance, Economic Stimulus and a Federal/State Clean Energy Partnership (Jan. 2009), at 1–3, http://www.cleanenergystates.org/Publications/CESA_federal_state_clean_energy_recommendation_1.08.09.pdf.

166. See *infra* note 227 and accompanying text for an analysis of preemption in the context of climate change.

167. See *infra* note 2065–206 and accompanying text.

168. See *supra* notes 41 & 151 and accompanying text.

169. For example, when announcing the reconsideration of the CAA waiver denial, President Obama stated:

[T]he federal government must work with, not against, states to reduce greenhouse gas emissions. California has shown bold and bipartisan leadership through its effort to forge 21st century standards, and over a dozen states have followed its lead. But instead of serving as a partner, Washington stood in their way. This refusal to lead risks the creation of a confusing and patchwork set of standards that hurts the environment and the auto industry.

The days of Washington dragging its heels are over. My administration will not deny facts, we will be guided by them. We cannot afford to pass the buck or push the burden onto the states. And that’s why I’m directing the Environmental Protection

ministration makes conscious decisions to connect collaborative efforts among cities, counties, and states into its larger-scale efforts through a mix of rulemaking, issuing executive orders, and supporting legislation, additional opportunities for predominantly small-scale diagonal regulation may be lost. Such a loss would prevent crosscutting regulation from gaining fully from the locally-specific knowledge and innovation being produced at smaller-scales.¹⁷⁰ Proposals in Part IV focusing on incorporating coalitions of smaller-scale actors more deeply into crafting financial incentives for greener vehicle technology and use aim to address this concern.¹⁷¹

B. Predominant Axis



Diagonal regulatory approaches tend to diverge not only in terms of how large- or small-scale their emphasis is, but also in the extent to which they focus on interconnecting key actors at a particular regulatory level or on creating interactions across levels. Predominantly horizontal regulation primarily involves collaboration within one or more levels, whereas predominantly vertical regulation focuses on interaction among levels, with minimal activity at any particular level. These categories may at times overlap with the predominantly small- or large-scale approaches, as they might be either top or bottom heavy. But they are distinct from the small- or large-scale approaches in that their focus is on which axis of the diagonal dominates rather than on which level of government dominates; for example, a predominantly horizontal coalition of entities working on climate change could be comprised of localities, states, or nations.

Agency to immediately review the denial of the California waiver request and determine the best way forward. This will help us create incentives to develop new energy that will make us less dependent on oil that endangers our security, our economy, and our planet.

President Barack Obama, Remarks on Jobs, Energy Independence, and Climate Change in the East Room of the White House (Jan. 26, 2009), *available at* [http:// www.whitehouse.gov/ blog_ post/ Fromperiltoprogress/](http://www.whitehouse.gov/blog_post/Fromperiltoprogress/).

170. For examples of the nuances of local efforts at climate regulation in Portland and Tulsa, see Osofsky & Levit, *supra* note 164.

171. See *infra* Part IV.

Dynamic federalism scholarship engages this dimension through in-depth analyses of the vertical and horizontal aspects of regulatory interactions. Since federalism concerns itself with questions of relationships among different levels of government, all federalism scholarship tends to be vertical in some sense. However, more dynamic approaches generally question traditional models of vertical relationships and argue for a more nuanced characterization of dynamics that may vary over time. J.B. Ruhl and James Salzman, for example, have developed an adaptive management model for complex environmental problems that brings dynamic federalism together with transgovernmental network and new governance theory.¹⁷² Horizontal federalism scholarship, which often contrasts itself with more traditional vertical federalism approaches, primarily involves analysis of the role that coalitions of subnational actors play in environmental regulation. For example, Noah Hall has explored the Great Lakes–St. Lawrence River Basin Compact among eight Great Lakes states through a horizontal federalism lens, arguing that their cooperative horizontal federalism approach allows for flexibility while avoiding a race to the bottom.¹⁷³

Motor vehicle emissions regulation reflects this range of scholarly discussion through its skews along each axis in different contexts. Predominantly horizontal efforts tend to arise out of a group of entities operating at a particular level that form a larger-scale coalition. The Obama Administration's initiatives on motor vehicle emissions that have significant horizontal dimensions involve other nation-states and the federal and state levels of U.S. government, but in different patterns. At the federal level, the Obama Administration interacts with other nation-states in international treaty negotiations, other multilateral forums, and bilateral negotiations, as described in Part II. While few of these negotiations have motor vehicle emissions as their primary focus, those emissions are part of the broader dialogues as one of the main sources of the U.S. greenhouse gas emissions being discussed.¹⁷⁴ The Administration's main horizontal interactions within the United States involve responding to judicial mandates, particularly *Massachusetts v. EPA*,¹⁷⁵ and participating in the legislative process, including both its failed efforts to pass cap-and-trade legislation and its ongoing efforts to support clean energy.¹⁷⁶ Its state-level efforts mix the

172. See Ruhl & Salzman, *Whittling Away*, *supra* note 148.

173. See Noah D. Hall, *Toward a New Horizontal Federalism: Interstate Water Management in the Great Lakes Region*, 77 U. COLO. L. REV. 405 (2006). For a thoughtful analysis of the nuances of horizontal federalism and its interaction with vertical federalism in a broader substantive context, see Allan Erbsen, *Horizontal Federalism*, 93 MINN. L. REV. 493 (2008).

174. See *supra* Part II.E.

175. 549 U.S. 497 (2007).

176. See *supra* Part II.

two axes, as it works vertically to collaborate with coalitions of leader states on issues such as tailpipe emissions and miles-per-gallon standards.

However, an analysis of the horizontal axis centered on Obama Administration initiatives would be incomplete because smaller-scale entities are leading a wide range of other horizontal efforts, many of which focus on how cars are driven and involve the Obama Administration's efforts on motor vehicles less directly. Climate Communities, "a national coalition of cities and counties that is educating federal policymakers about the essential role of local governments in addressing climate change and promoting a strong local-federal partnership to reduce greenhouse gas (GHG) emissions,"¹⁷⁷ exemplifies this phenomenon. While the national coalition is not itself a regulator, Climate Communities is comprised of numerous smaller-scale regulatory entities. Its "Blueprint for President Obama and [the] 111th Congress," produced together with the national branch of ICLEI (an international entity also known as Local Governments for Sustainability) at the start of the Obama Administration, for instance, envisioned a transformation of the U.S. national transportation strategy through both increasing federal resources and supporting local initiatives, including vehicle miles traveled reduction efforts.¹⁷⁸ Although the creation of this national-scale entity and its efforts to influence policy at that level gives the collaboration a vertical dimension, it is dominated by interactions among the local governments.¹⁷⁹

The Transportation and Climate Initiative, launched in October 2010 by eleven Northeastern and Mid-Atlantic states and the District of Columbia and facilitated by the Georgetown Climate Center, a non-partisan center based at Georgetown Law, represents another variation of small-scale-driven horizontal collaboration. This initiative involves collaboration among state-level agency heads "to improve the efficiency of the transportation system, reduce roadway congestion, update public transport, address the challenges of vehicles miles traveled, reduce air pollution and energy use, and ensure that long-term development is sustainable and enhances quality of life in communities within their jurisdiction."¹⁸⁰ The initiative's strategic workplan explains that it will innovate through its comprehensive

177. Press Release, Climate Communities, Climate Communities' Successes and Upcoming Activities, available at http://climatecommunities.us/documents/successes_upcoming_activities.pdf (last visited Jan. 10, 2011).

178. Climate Communities & ICLEI USA, Empowering Local Government Climate Action: Blueprint for President Obama and the 111th Congress, <http://climatecommunities.us/documents/blueprint.pdf> (last visited Jan. 10, 2011).

179. See Climate Communities Brochure, <http://climatecommunities.us/documents/brochure.pdf> (last visited Jan. 10, 2011); see also Osofsky, *Is Climate Change "International"?*, *supra* note 5.

180. See The Transportation & Climate Initiative of the Northeast and Mid-Atlantic States, Strategic Workplan for the Transportation and Climate Initiative (TCI): An Agenda for Action, Oct. 2010, available at <http://www.georgetownclimate.org/transportation/files/TCI-workplan.PDF> [hereinafter TCI Strategic Workplan].

examination of energy use across all segments of the transportation sector in order to “develop a comprehensive agenda for cost effectively reducing energy use to deliver greenhouse gas emissions reductions as well as economic benefits within the region.”¹⁸¹ The group aims to make progress within each state, across the region, and through partnerships with relevant federal agencies. The Initiative thus grows out of horizontal relationships among state agency leaders, but aims to interact with and help to shape policy at multiple levels.

The efforts of Climate Communities and of the Transportation and Climate Initiative are predominantly horizontal and involve predominantly small-scale actors in their multi-level advocacy, but larger-scale, predominantly horizontal efforts on climate change beyond those of the federal government also exist. The local, state, and provincial efforts announced at the Copenhagen meeting are international-level horizontal agreements among subnational entities at different levels of government.¹⁸² Larger-scale variations upon this model beyond traditional treaty negotiations include nation-states collaborating with corporations at an international level, such as through the ongoing U.S. involvement in the Asia-Pacific Partnership on Clean Development and Climate.¹⁸³

The primary advantage of predominantly horizontal regulatory strategies is that they build upon commonalities in governance at particular levels of government. They can use existing coalitions of entities at one governmental level, and then add a vertical dimension into those collaborations. The above-described Climate Communities and Transportation and Climate Initiative represent possible small-scale variations upon this model; Climate Communities uses a coalition of localities to create a national entity and the Transportation and Climate Initiative includes state-agency heads from eleven Northeastern and mid-Atlantic states and the District of Columbia in coordinated state and region-level planning.¹⁸⁴

However, this ease of creation is offset by the limited vertical interaction that predominantly horizontal approaches involve. Because their vertical dimensions primarily arise from horizontal relationships, these diagonal regulatory efforts may not create the level of multiscale interaction needed to help entities at different levels of government collaborate. For example, Climate Communities operates through high-level interaction among cities and counties, but primarily engages other levels of government in its advocacy initiatives;¹⁸⁵ its efforts would need to be paired with other predominantly horizontal or vertical approaches to create a scheme

181. See *id.*

182. See *supra* note 6 and accompanying text.

183. See ASIA-PACIFIC PARTNERSHIP ON CLEAN DEVELOPMENT AND CLIMATE, <http://www.asiapacificpartnership.org/english/default.aspx> (last visited Jan. 10, 2011).

184. See *supra* notes 177–81 and accompanying text.

185. See *supra* notes 177–79 and accompanying text.

with more overall integration that would have the capacity to address climate change more completely. Similarly, the Transportation and Climate Initiative acknowledges in its strategic plan the need to collaborate with federal agencies and stay abreast of federal legislative developments.¹⁸⁶

Predominantly vertical regulatory strategies can also arise out of already-existing regulatory arrangements. For example, in the United States, the federalist system creates vertical arrangements among federal, state, and local governments. These arrangements—which, as discussed in the following Subpart, can include a mix of top-down and bottom-up interactions—often become implicated in the climate change context. Under the Clinton Administration, for instance, the EPA created a program to fund states developing climate regulation plans.¹⁸⁷ Under the Bush Administration, California requested a CAA waiver—the denial of which became symbolic of an approach to climate policy that the Obama Administration swiftly repudiated by granting the waiver—to pursue more stringent state-level regulation of motor vehicle greenhouse gas emissions.¹⁸⁸ The current Obama Administration approaches to motor vehicle greenhouse gas emissions regulation generally have vertical dimensions, and range from regulations that are predominantly vertical to those that are more mixed vertical-horizontal. The Administration's DOE block grant program for states, territories, tribes, and localities exemplifies the largely vertical approach because it gives financial incentives to smaller-scale governmental entities, whereas its National Program, as described above, includes a significant horizontal dimension through the involvement of coalitions of states.¹⁸⁹

Like the predominantly horizontal strategies, predominantly vertical ones are easy to create, but risk insufficient interaction on the other—in this case, horizontal—axis. For example, the DOE block grant program promotes smaller-scale action, but does so in collaboration with specific participating governments rather than with the broader, existing state and local coalitions.¹⁹⁰ In order to be fully crosscutting, regulatory approaches should both build upon and foster interconnections within levels of government. For the Obama Administration to maximize interaction among key climate actors—which, this Article contends, makes overall climate regulation more cohesive and effective—it should formalize efforts to incorporate the other axis, either directly or through pairing predominantly

186. See TCI Strategic Workplan, *supra* note 180.

187. See *Adaptation Planning—What U.S. States and Localities are Doing*, PEW CENTER ON GLOBAL CLIMATE CHANGE, http://www.pewclimate.org/docUploads/State_Adaptation_Planning_02_11_08.pdf (last visited Jan. 10, 2011).

188. See, e.g., Clean Air Act § 209(b), 42 U.S.C. § 7543(b) (2008); EPA Notice of Opportunity for Public Hearing and Comment, 72 Fed. Reg. 21260 (Apr. 30, 2007); Waiver Denial Letter, *supra* note 8; Petition for Review, *supra* note 8; Press Release, *EPA Grants California GHG Waiver*, *supra* note 41.

189. DOE Block Grant Program, *supra* note 75.

190. See *id.*

horizontal with predominantly vertical programs. As described in more depth in Part IV, for example, the Obama Administration has many opportunities in the context of motor vehicle greenhouse gas emissions regulation to involve smaller-scale government actors in deciding how to frame and distribute financial incentives.¹⁹¹ Such involvement ensures that those receiving funding to innovate also help to shape and coordinate those efforts to support the innovation, which creates a greater alignment between the federal and smaller-scale programs that has the potential to augment efficiency and effectiveness.

Moreover, the skews in this dimension, like the scalar ones, vary depending on whether one focuses on what cars we drive or how we drive them. Although horizontal coalitions of smaller-scale entities push for progress on both fronts, and have had a significant policy impact, the smaller-scale entities have more control over the second category because of the way in which regulatory authority is divided. The federal government is charged with implementation of the federal statutes that provide the basis for much of the technology-oriented motor vehicles emissions regulation, while state and local governments play a primary role in the land-use planning decisions that shape how people use their vehicles. For example, after participating in the process of crafting the National Program, the smaller-scale entities will ultimately be bound by its federal-level standards, which apply vertically.¹⁹² In contrast, even when in dialogue with or incentivized by the Obama Administration, states and localities still largely control the smaller-scale land-use planning and transportation initiatives which influence the way in which people use their cars.¹⁹³ As discussed in depth in Part IV, these skews impact where the opportunities exist for the Obama Administration to pursue additional diagonal initiatives.

C. Predominant Direction of Hierarchy



191. See *infra* Part IV.

192. See *supra* notes 41–50 and accompanying text.

193. See *supra* notes 164, 169–70 & 177–81 and accompanying text and *infra* notes 207–18 and accompanying text.

Because any diagonal scheme includes different levels of government, questions of hierarchy arise. The key focus for this dimension of diagonal regulation is the direction (from up-to-down or down-to-up) of the vertical component of the regulatory approach. Predominantly top-down approaches involve dictates from larger-scale entities to smaller-scale entities, whereas predominantly bottom-up approaches are driven by the sub-national dictates. As with the first two categories, approaches to what vehicles we drive skew differently in this dimension than approaches to how we drive them—namely, the former tend to be much more top-down and the latter tend to be much more bottom-up, although both have top-down and bottom-up elements in the Obama Administration approach and other approaches. For example, mandates from the EPA¹⁹⁴ or block grants from the DOE¹⁹⁵ would typically be predominantly top-down, vertical, and large-scale in whichever administration implements them, whereas Climate Communities' efforts¹⁹⁶ are predominantly bottom-up, horizontal, and small-scale.

In grappling with this third dimension of hierarchy, dynamic federalism scholarship analyzes the need for both top-down and bottom-up dynamics in evolving, complex environmental regulatory contexts. For instance, Daniel Esty and William Buzbee, among others, have both argued for nuanced models of federal-state interaction that allow for policy approaches to vary based on contextual needs.¹⁹⁷ Ann Carlson's work on iterative federalism has looked at the interplay between state and federal actors in a series of relationships and argued that in the context of Clean Air Act waivers, the vertical regulatory direction varies over time in an iterative fashion.¹⁹⁸ Tony Arnold has explored the complex top-down and bottom-up dynamics that frame land-use planning in the United States.¹⁹⁹ In another variation outside of the environmental context, Robert Schapiro uses the metaphor of polyphony from music to argue that an interactive model of federalism, with ever shifting state-federal dynamics, should supplant the traditional dualist model.²⁰⁰

194. See *supra* note 187 and accompanying text.

195. See *supra* notes 75 & 189 and accompanying text.

196. See *supra* notes 177–179 and accompanying text.

197. See William W. Buzbee, *Contextual Environmental Federalism*, 14 N.Y.U. ENVTL. L.J. 108 (2005); William W. Buzbee, *Recognizing the Regulatory Commons: A Theory of Regulatory Gaps*, 89 IOWA L. REV. 1, 49–56 (2003) [hereinafter Buzbee, *Regulatory Commons*]; Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570 (1996).

198. See Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097 (2009).

199. See Craig Anthony Arnold, *The Structure of the Land Use Regulatory System in the United States*, 22 J. LAND USE & ENVTL. L. 441 (2007).

200. See ROBERT A. SCHAPIRO, POLYPHONIC FEDERALISM: TOWARD THE PROTECTION OF FUNDAMENTAL RIGHTS 92–120 (2009).

Scholars have also highlighted the opposite advantages and disadvantages of top-down and bottom-up regulatory strategies. Top-down approaches, such as setting a national-level motor vehicle emissions standard, have the benefit of avoiding divergence at smaller-scales, a much-discussed concern with bottom-up approaches.²⁰¹ Specifically, they prevent piecemeal strategies that can cause leakage—movement from jurisdictions with more stringent regulations to jurisdictions with more lax regulations—and set clear expectations for corporations and others that have interests which crosscut jurisdictions.²⁰² Also, as with the large-scale efforts, top-down approaches comport with traditional expectations about how a complex problem like climate change should be regulated.²⁰³ Beyond their immediate benefits, these advantages together help make such approaches more politically viable.

Conversely, top-down approaches, unless carefully structured, risk stifling the innovation and local knowledge that localities and states can provide. Even as the federal government moves swiftly under the Obama Administration to address climate change, its size prevents direct integration of the nuances and competencies of subnational regulations. Bottom-up efforts capture more easily the many divergences that are needed for smaller-scale actors to respond to local conditions without the rigidity and constraint that often accompany top-down mandates.²⁰⁴

One of the primary ways in which the federal government addresses issues of hierarchy is through its approach to preemption. President Obama's May 2009 memorandum to heads of executive departments and agencies reinforced that his Administration is departing significantly from the Bush Administration regarding preemption.²⁰⁵ The memorandum established that preemption had to be justified and that preambles to regulation should not attempt to establish preemption without accompanying regulatory language.²⁰⁶ This general approach to preemption creates more room for and protection of bottom-up regulatory efforts.

However, even with its policy on preemption, the Obama Administration still faces questions about both when preemption is appropriate and when to delegate more of its authority. For example, a number of current motor vehicle emissions reduction initiatives by smaller-scale governments, especially coalitions of localities, push the federal government to delegate more authority to cities and counties and to provide additional

201. See Wiener, *supra* note 161.

202. See *id.*

203. See *supra* note 161 and accompanying text.

204. See Osofsky, *Is Climate Change "International"?*, *supra* note 5; Hari M. Osofsky, *Climate Change Legislation in Context*, 102 Nw. U. L. Rev. Colloquy 245 (2008).

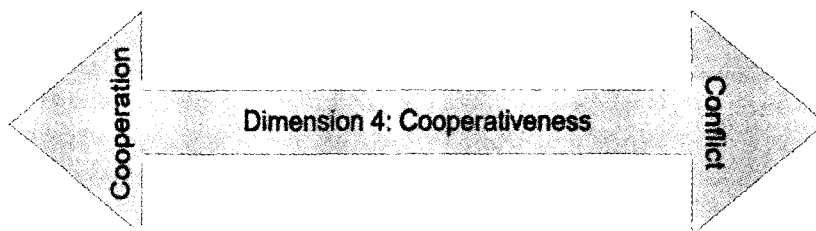
205. See Memorandum for the Heads of Executive Departments and Agencies, 74 Fed. Reg. 24693 (May, 20, 2009).

206. See *id.*

funding for locally-driven efforts.²⁰⁷ Moreover, these initiatives take place in the broader context of the iterative process that has led to the converging California and federal standards for tailpipe emissions and fuel efficiency.²⁰⁸ While the Obama Administration has been responsive to the need for local development of transportation solutions through its ARRA financial incentives programs, the federal government still controls that allocation of funds, rather than making the distribution in collaboration with coalitions of localities working on these issues.²⁰⁹

Either top-down or bottom-up efforts, if carefully structured, can avoid the above pitfalls. Some top-down mandates include adequate flexibility to allow for smaller-scale innovation and tailoring, and some bottom-up efforts are sufficiently coordinated to address many of the critiques. For example, tandem top-down and bottom-up approaches, such as the Obama Administration's simultaneous efforts on fuel standards and the CAA waiver, can incorporate both types of benefits. The key, either way, is an awareness of these benefits and limitations so that they can be addressed in an overall regulatory scheme. As discussed in more depth in Part IV, the Obama Administration should consider additional opportunities for building more movement in this dimension into its traditionally-structured top-down programs by bringing smaller-scale governmental coalitions into more of its transportation decision-making.

D. Predominant Level of Cooperativeness



207. For the example of the U.S. Conference of Mayors, see *supra* notes 152 and 165. For the example of Climate Communities, see *supra* notes 177–179. Both the National League of Cities and the Association of Metropolitan Planning Organizations have made similar statements. For the former, see *The Future of Our Hometowns and the Nation: At Issue: Infrastructure*, available at <http://www.nlc.org/ASSETS/54FECF4146254696AA20BB36C3C660F0/Infrastructure%20Policy%20Brief%20-%20Updated%202909.pdf> (last visited Jan. 10, 2011); for the latter, see *Summary Report, MPO Peer Workshop on Planning for Climate Change*, Mar. 6–7, 2008, available at http://www.ampo.org/assets/library/171_workshopclimatechgseattle.pdf (last visited Jan. 10, 2011).

208. See Carlson, *Iterative Federalism*, *supra* note 198. See also *supra* notes 41–53 and accompanying text.

209. See *supra* notes 64–65 and accompanying text.

Finally, diagonal regulatory strategies are not necessarily cooperative. My preceding companion piece traces the way in which lawsuits over climate regulation, for example, serve as forces of diagonal integration.²¹⁰ One of the smaller-scale case studies from that piece and developments since its publication demonstrate the mix of cooperation and conflict that encourages the land-use planning decisions needed to bring down greenhouse gas emissions, including those from motor vehicles.²¹¹ California and several nongovernmental organizations used California Environmental Quality Act claims to force San Bernardino County to regulate greenhouse gas emissions more explicitly.²¹² As the County settled the case in August 2007 in an agreement that included developing an emissions reduction plan,²¹³ it launched "Green County San Bernardino," a multiscalar environmental effort involving of individuals, companies, cities, other local government entities, and a neighboring county.²¹⁴ In particular, "Green Valley Cities" is a cooperative venture with Riverside County to reduce greenhouse gas emissions through flexible local implementation; participating entities include not only cities, but also water districts and the Joint Powers Authority of a realigned Riverside County Air Force base.²¹⁵

These collaborations include initiatives to promote green transportation in San Bernardino County. The County's website advertises some preexisting initiatives, such as a two-decades-old commuter services program which rewards county employees for coordinating alternative commuting

210. See Osofsky, *Is Climate Change "International"?*, *supra* note 5.

211. See *id.*

212. See Petition for Writ of Mandate at 12, *Ctr. for Biological Diversity v. County of San Bernardino*, (Super. Ct. San Bernadino County 2007) (No. 07 Civ. 293), available at [http://www.communityrights.org/PDFs/Petition_\(00011023\).PDF](http://www.communityrights.org/PDFs/Petition_(00011023).PDF); Petition for Writ of Mandate at ¶ 5, *People v. County of San Bernardino*, (Super. Ct. San Bernadino County 2007) (No. 07 Civ. 329), available at http://ag.ca.gov/global_warming/pdf/San_Bernardino_complaint.pdf.

213. See Confidential Settlement Agreement, *People v. County of San Bernardino* (Super. Ct. San Bernadino County 2007) (No. 07 Civ. 329), available at http://ag.ca.gov/cms_pdfs/press/2007-08-21_San_Bernardino_settlement_agreement.pdf; Imran Gori, *Lawsuit Against San Bernardino County General Plan Dropped*, THE PRESS ENTERPRISE, Dec. 17, 2007, available at http://www.pe.com/localnews/inland/stories/PE_News_Local_H_settle18.31d902e.html; Email from Jonathan Evans, Staff Attorney, Center for Biological Diversity, to Hari M. Osofsky, Associate Professor, Washington and Lee University School of Law (Dec. 15, 2008, 16:43:00 EST) (on file with author).

214. See Press Release, Biane Unveils "Green County San Bernardino" Programs (Aug. 27, 2007) available at http://www.sbcounty.gov/greencountysb/content/press_releases/2007_0827_bosd2_green_county.pdf; Green County San Bernardino, http://www.sbcounty.gov/greencountysb/about_gc.aspx (last visited Jan. 10, 2011).

215. See GREEN VALLEY INITIATIVE JURISDICTION, http://www.sbcounty.gov/greencountysb/content/green_valley_initiative_cities/gvi_jurisdiction.pdf (last visited Jan. 10, 2011); GREEN VALLEY INITIATIVE RESOLUTION, http://www.sbcounty.gov/greencountysb/content/green_valley_initiative_cities/gvi_resolution.pdf (last visited Jan. 10, 2011); GREEN VALLEY INITIATIVE CITIES, http://www.sbcounty.gov/greencountysb/green_valley_initiative_cities.aspx (last visited Jan. 10, 2011). I have analyzed the implications of these developments for our conceptions of "local" in Hari M. Osofsky, *Scaling "Local": The Implications of Greenhouse Gas Regulation in San Bernardino County*, 30 Mich. J. Int'l L. 689 (2009).

arrangements and a fleet management program focused on transitioning the county to alternative-fuel vehicles.²¹⁶ But the website also focuses on efforts by car companies to install solar panels on their warehouses and provides resources to companies on telecommuting and to residents on alternative commuting, bicycle paths, and clean cars.²¹⁷ The County supports these alternatives tangibly through collaborating with other Southern California counties in programs like CommuteSmart.info, which helps to connect commuters to ride-sharing options, provides free rides home for stuck ride-sharers, and advertises rebates and incentives for those who share rides.²¹⁸ Thus, over time, a conflictual relationship between the county and the state has helped to produce a number of cooperative relationships among the county and other local governmental entities which include greening transportation further.

Cooperativeness, like the other dimensions, serves as just one factor in a regulatory scheme, and may vary at different stages. As I have described in depth in the preceding companion article, California's waiver request and the EPA's denial have formed a part of conflicts over the appropriate role of states in motor vehicle emissions regulation.²¹⁹ However, the Obama Administration EPA's reconsideration of both the granting of the waiver and the results thereof, in tandem with harmonization efforts with respect to fuel economy standards, have created a cooperative diagonal scheme.²²⁰ Recent federalism scholarship explores the complex mix of cooperation and conflict that arises in a variety of contexts, including with respect to climate change.²²¹

Cooperative federalism's greatest advantage as a basis for climate change regulation is its ability to create coordinated multiscalar action in which each actor provides its unique contribution. A number of scholars and policymakers have taken significant steps to sketch a framework for cooperative action. They are exploring the nuances of how collaboration might work among specific entities in particular policy areas. This analysis makes clear that cooperative approaches, if crafted well, incentivize action while making room for innovation. For instance, a Center for Progressive Reform study by William Andreen and others presents how localities,

216. See GREEN COUNTY SAN BERNARDINO, COMMUTER SERVICES, http://www.sbcounty.gov/greencountysb/county_projects/commuter_services.aspx (last visited Jan. 10, 2011); GREEN COUNTY SAN BERNARDINO, GREEN FLEET, http://www.sbcounty.gov/greencountysb/county_projects/transportation_accomplishments.aspx (last visited Jan. 10, 2011).

217. For these links, see GREEN COUNTY SAN BERNARDINO, <http://www.sbcounty.gov/greencountysb/default.aspx> (last visited Jan. 10, 2011).

218. See COMMUTESMART.INFO, <http://www.commutesmart.info/> (last visited Jan. 10, 2011).

219. See Osofsky, *Is Climate Change "International"?*, *supra* note 5. See also *supra* notes 41–53 and accompanying text.

220. See *supra* note 8 and accompanying text.

221. See *infra* notes 222–227.

states, and the federal government can work together on this problem.²²² Alice Kaswan has also published an interesting cooperative federalism proposal bringing together these three levels of government, and Holly Doremus and W. Michael Hanemann have argued that the Clean Air Act provides a cooperative federalism model that could be used in crafting effective climate change legislation.²²³ Some dynamic environmental approaches combine cooperative federalism with other theories. For example, Brad Karkkainen's analysis of information-forcing environmental regulation brings together cooperative federalism and new governance approaches to consider how "[p]roperly structured, penalty default rules might be used to induce meaningful participation in locally devolved, place-based, collaborative, public-private hybrid, new governance institutions, aimed at integrated, adaptive, experimentalist management of watersheds and other institutions."²²⁴ This particular combination of cooperative federalism and new governance approaches allows for innovative structures that encompass the multidimensionality of these problems.

However, other dynamic federalism scholars have questioned the extent to which cooperative models can capture the disagreement over climate change policy choices, and as a result, a stream of scholarship focusing on uncooperative federalism has emerged. This scholarship includes those directly terming their model "uncooperative," such as Karen Bridges, Kirk Junker, and Jessica Bulman-Pozen and Heather Gerken.²²⁵ But the literature also contains work like that of Ann Carlson and Robert Schapiro, which incorporates conflict in the dynamics they highlight.²²⁶ In addition, some scholars, such as William Buzbee, Ann Carlson, Robert Glicksman and Richard Levy, Alexandra Klass, and Benjamin Sovacool have looked at these questions of cooperation and conflict in a preemption context, arguing for the important complementary role that state and local efforts and state court common law litigation play in the broader environmental regulatory picture.²²⁷ Overall, this scholarship dealing with the

222. See Andreen, et. al., *supra* note 164.

223. See Alice Kaswan, *A Cooperative Federalism Proposal for Climate Legislation: The Value of State Autonomy in a Federal System*, 85 DENV. U. L. REV. 791 (2008); Holly Doremus & W. Michael Hanemann, *Of Babies and Bathwater: Why the Clean Air Act's Cooperative Federalism Framework is Useful for Addressing Global Warming*, 50 ARIZ. L. REV. 799 (2008).

224. Bradley C. Karkkainen, *Information-Forcing Environmental Regulation*, 33 FLA. ST. U. L. REV. 861, 888 (2006).

225. See Kirk W. Junker, *Conventional Wisdom, De-emption and Uncooperative Federalism in International Environmental Agreements*, 2 LOY. U. CHI. INT'L L. REV. 93 (2004-05); Jessica Bulman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 YALE L.J. 1256 (2009); Karen Bridges, Note, *Uncooperative Federalism: The Struggle over Subsistence and Sovereignty in Alaska Continues*, 19 PUB. LAND & RESOURCES L. REV. 131 (1998).

226. See SCHAPIRO, POLYPHONIC FEDERALISM, *supra* note 200; Carlson, *Iterative Federalism and Climate Change*, *supra* note 198.

227. See William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547 (2007) [hereinafter Buzbee, *Asymmetrical Regulation*]; Buzbee, *Regulatory Commons*, *supra* note 197; Ann E. Carlson, *Federalism, Preemption, and Greenhouse Gas*

limits of cooperative models explores the way in which disagreement over time should be brought into a federalist regulatory scheme.

This scholarship on conflict within federalism highlights two potential difficulties facing cooperative schemes. First, conflict exists. As Robert Schapiro has noted, cooperative schemes may struggle at times to address differences adequately and to include all relevant actors.²²⁸ Certainly, in the U.S. climate change context, states have and continue to vary greatly in how they want to approach the problem, as represented by the states on both sides of *Massachusetts v. EPA*.²²⁹

Second, and at least as importantly, conflict has value. Regulatory schemes that include opportunities for dissent, such as through citizen suit provisions, can potentially incorporate divergent views more effectively, as well as make sure that pressure remains on policymakers to think through tough issues.²³⁰ In two recent high-profile examples of conflict over motor vehicle emissions regulation—*Massachusetts v. EPA* and the California CAA waiver dispute—the change in presidential administration during their ultimate resolution helped to shape more rigorous national approaches. These approaches will continue to evolve as the Obama Administration develops its regulatory approach more fully over time in collaboration with California and automobile companies and attempts to navigate the intense partisan politics of climate change.²³¹ However, as these examples illustrate, the Obama Administration will often need a mix of cooperation and conflict in this evolution over time to achieve effective multiscalar climate regulation; the conflict helps to air differences and to create pressure for action, while the cooperation allows for coordination and collaboration.

In sum, an effective diagonal strategy could be developed further through a combination of approaches skewed in any of the four dimen-

Emissions, 37 U.C. DAVIS L. REV. 281, 290–92 (2003); Robert L. Glicksman & Richard E. Levy, *A Collection Action Perspective on Ceiling Preemption by Federal Regulation: The Case of Global Climate Change*, 102 NW. U. L. REV. 579 (2008); Alexandra B. Klass, *State Innovation and Preemption: Lessons from State Climate Change Efforts*, 41 LOY. L.A. L. REV. 1653 (2008); Benjamin K. Sovacool, *The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change*, 27 STAN. ENVTL. L.J. 397 (2008). For further exploration of climate federalism issues, see *Arizona Law Review's* 2008 symposium issue on the topic, described in Carol M. Rose, *Federalism and Climate Change: The Role of States in a Future Federal Regime—An Introduction*, 50 ARIZ. L. REV. 673 (2008).

228. See Robert A. Schapiro, *Toward a Theory of Interactive Federalism*, 91 IOWA L. REV. 243, 283–85 (2005) [hereinafter Schapiro, *Interactive Federalism*].

229. 549 U.S. 497 (2007). I discuss the dynamics among actors in the suit in more depth in Hari M. Osofsky, *The Intersection of Scale, Science, and Law in Massachusetts v. EPA*, 9 Or. Rev. Int'l L. 233 (2007) (actual publication 2008).

230. See Osofsky, *Is Climate Change "International"?*, *supra* note 5; Hari M. Osofsky, *Conclusion: Adjudicating Climate Change across Scales*, in *Adjudicating Climate Change: State, National, and International Approaches* 375 (William C.G. Burns & Hari M. Osofsky eds., 2009); Schapiro, *Interactive Federalism*, *supra* note 228, at 283–85.

231. See *supra* note 8 and accompanying text.

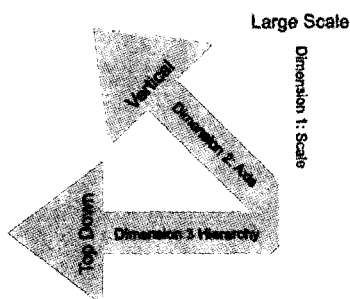
sions. The key to creating the needed crosscutting interactions is to ensure that incentives for a variety of skews exist in a situationally appropriate fashion. Part IV examines what those incentives might be in the context of the Obama Administration's approach to motor vehicles regulation. It builds upon this Part's assessment of where skews lie in each of these dimensions to examine future possibilities for diagonal strategies in this area.

IV. IMPLICATIONS FOR THE OBAMA ADMINISTRATION'S APPROACH TO MOTOR VEHICLES GREENHOUSE GAS EMISSIONS

This Part analyzes the implications of the taxonomy's application to motor vehicle greenhouse gas emissions regulation for the Obama Administration's future policy choices. As noted previously, motor vehicle emissions regulation has two core pieces: what we drive and how we drive. Existing diagonal regulatory approaches focusing on what we drive tend to be more large-scale, vertical, and top-down with a mixture of cooperation and conflict, whereas those focusing on how we drive tend to be the opposite: more small-scale, horizontal, and bottom-up.

This difference likely reflects a divergence in how we envision these two regulatory projects, mainly because of the balance of corporate versus individual involvement needed for their implementation and because of the grounding of the latter one in smaller-scale land-use planning. Many of the regulations that impact what cars we drive directly affect the auto industry, and so the industry pushes for the larger-scale uniformity which it finds economically advantageous and efficient. Many of the regulations that impact consumer choices directly, but the auto industry more indirectly—such as the way city streets are organized or carpool incentives—tend to rely more on smaller-scale decision-making and local specifics. While the bifurcation is not complete because top-down programs rely upon diverse smaller-scale implementation and smaller-scale government has helped drive federal-level mandates, the existing motor vehicle regulation tends to have this divergence when viewed through the lens of the taxonomy. These tendencies point the way for future diagonal strategies, which this Part explores by analyzing approaches to what cars we drive, how we drive them, and motor vehicle greenhouse gas emissions litigation.

A. Technology-Driven Standards and Incentives (Or, What Cars We Drive)



With regard to what we drive, as illustrated by the above diagram, the Obama Administration's approach primarily takes the form of top-down, national-level mandates and top-down, multiscale financial incentives programs paired with international cooperation. Its National Program forces companies to invest in greener cars by setting combined emissions and efficiency standards that ramp up over time but is endorsed by these companies out of their desire for national uniformity.²³² The various financial incentives programs, which are significantly funded through ARRA at this point, help foster corporate and smaller-scale governmental development of the technology needed to meet those standards in ways that fit specific contexts.²³³

However, as discussed in depth above, these overall tendencies contain nuance. Neither its mandates nor its financial incentives are fully top-down because they involve opportunities for bottom-up input and involvement. For example, the Clean Air Act waiver system has allowed both coalitions of states to help drive more stringent federal standards and individual companies, cities, states, and tribes to develop the specific programs which the federal government funds.²³⁴ In addition, the larger international context in which the mandates and incentives take place helps to shape them, which results in another large-scale, horizontal component of the dynamics. As the United States collaborates with other key countries on motor vehicles, fuel technology, and transportation strategy, its national policies are influenced by the approaches and commitments of its nation-state collaborators.²³⁵ For example, the collaboration between the

232. See *supra* notes 44 & 162.

233. See *supra* Part II.

234. See *supra* notes 41–50 and accompanying text.

235. See *supra* Part II.E.

United States and China on electric vehicles is spurring demonstration projects in a number of cities.²³⁶

Given this complex, but clearly skewed, backdrop that the taxonomy illuminates, this Section queries whether this imbalance is appropriate. These skews have their advantages, as the prior Part details. Large-scale, vertical, top-down approaches comport with many people's understanding of climate change as a large-scale problem, help to create certainty for corporations that allows for planning and efficient business choices, and prevent leakage among jurisdictions. Appropriate technology for vehicles and fuels should arguably be relatively uniform across jurisdictions, given the national and international markets for these products.²³⁷

With full recognition of those advantages of current skews, this Part argues for the value of achieving more balance by involving smaller-scale actors in federal decision-making processes. It proposes methods for involvement which would achieve the benefits of locally-specific knowledge and innovation without undermining the advantages of the current skews. Even in the technology context, locally-specific resources, needs, and politics make some approaches more viable than others. For example, solar only works well in places which have enough sun, and wind power only works well in places which have enough wind. An electric car is most viable in states willing to invest in enough charging stations, and biofuels will be available without the monetary and emissions costs of transporting them in places where they are grown. Moreover, the specific people with the knowledge and skills to develop particular innovations, whether scientifically or in practical implementation, will vary from place to place.²³⁸ If there are ways to create large-scale certainty and consistency, but take the smaller-scale variation into account, our policies can gain fuller advantages in each dimension.

First and foremost, a major part of achieving this balance in the future is maintaining balancing efforts which already exist. To that end, the Obama Administration will need to decide how committed it is to preserving existing diagonals in the face of increasing preemption pressure. The Obama Administration has already constrained preemption in the Executive Branch through the President's May 2009 memorandum.²³⁹ As the National Program continues to develop, the Obama Administration has managed to maintain a cooperative rather than preemptive approach to

236. See *supra* note 132 and accompanying text.

237. See *supra* Part II.

238. For a discussion of potential alternative vehicle technologies and their benefits and limitations, see Joshua P. Fershee, *Struggling Past Oil: The Infrastructure Impediments to Adopting Next-Generation Transportation Fuel Sources*, 40 CUMB. L. REV. 87 (2009); Pamela Cohn, Comment, *Automobile Pollution: Japan and the United States—Cooperation or Competition?*, 9 EMORY INT'L L. REV. 179, 183–86 (1995).

239. See *supra* note 205 and accompanying text.

obtaining uniformity. However, before climate change legislation failed, pressure existed, particularly from impacted companies, to make comprehensive federal climate change legislation highly preemptive.²⁴⁰ To the extent that some form of climate change or, more likely, clean energy legislation becomes politically viable, hard choices will again emerge about how preemptive those statutes should be. Advocates of significant preemption not only cite the need for corporate certainty and efficiency, but also argue that under an emerging cooperative comprehensive regime, significant opportunities for divergence are no longer needed.²⁴¹

Those favoring more limited preemption, on the other hand, typically focus on the historically and currently important role that provisions like the CAA waiver play in helping to drive stronger federal regulatory efforts.²⁴² Analyzing these efforts through the lens of the taxonomy reinforces the argument against preemption by demonstrating the way in which these provisions allow for shifting skews in each dimension over time. Specifically, the shifts in skews over time create the iterative process that Ann Carlson has described in this context, which has helped to drive stronger federal regulation.²⁴³ This diagonal-enhancing quality of these provisions helps to make the overall regulatory approach more crosscutting and flexible, and the Obama Administration should not give in to pressure to make a comprehensive national program rigidly top-down.

Second, and in more of a shift from the status quo, the Obama Administration should explore options for greater involvement by smaller-scale government coalitions in the development of its financial incentives programs. While the current programs allow each individual, smaller-scale government to develop a locally-specific, innovative plan, they often do not provide sufficient opportunity for smaller-scale, horizontal collaboration and conflict to shape the overall contours of what it approves and how these projects develop over time. The Obama Administration's current traditional structure in most of its decisions regarding green motor vehicles technology—namely, the federal government assessing smaller-scale applications and approving some of them—only allows for those collaborative moments informally, or through specific efforts to connect related programs.²⁴⁴

Accordingly, the Obama Administration should expand upon its current models to build more programs that involve innovative collaboration.

240. See, e.g., *Voinovich Throws Curveball at Senators' Plan to Limit GHG Regs in Climate Bill*, ENV'T & ENERGY DAILY (Apr. 22, 2010), <http://www.nytimes.com/cwire/2010/04/22/22climate-wire-sen-voinovich-throws-curveball-at-senators-p-32487.html>.

241. Jonathan Wiener, for example, argues more broadly for the need for larger-scale policy solutions. See Wiener, *supra* note 161.

242. See sources cited *infra* note 269 and *supra* note 227.

243. See Carlson, *Iterative Federalism and Climate Change*, *supra* note 198.

244. See *supra* Part II.

For example, its approaches to crafting national programs in the motor vehicle and clean energy contexts—in which it brought together key subnational and corporate actors—might also work well with respect to financial incentives. The Administration might also expand upon these models by better including national organizations of smaller-scale governments in the decision-making. These entities—which have collective interests and so are unlikely to lobby for particular local projects—could be more involved in shaping the contours of financial incentives programs and the funding decisions that those programs entail.²⁴⁵ The Administration has the beginnings of such an approach in the DOE's Clean Cities program, where the federal government is working with smaller-scale coalitions around the country, but even this project does not seem to integrate those coalitions into national-level decision-making.²⁴⁶ Such integration would not only make efforts to address what cars we drive less skewed within the taxonomy's dimensions, but also create a funding and policymaking scheme that more effectively incorporates smaller-scale perspectives. Such perspectives are particularly useful in assessing the on-the-ground viability of specific technology and the types of consumer incentives which would be most effective in particular locales—assessments that should be incorporated into what the Obama Administration chooses to incentivize.

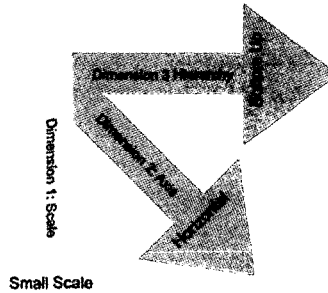
These suggestions regarding preemption and inclusiveness demonstrate the role that the taxonomy can play in shaping future policy regarding technology-driven approaches. While the taxonomy does not dictate any particular policy strategy, it does indicate where diagonal approaches skew. Although the Obama Administration may decide at times that such skews are appropriate, an awareness of them can help to motivate a more balanced approach overall. Specifically, since approaches to what cars we drive tend to be skewed so heavily, particularly with respect to the first three dimensions—they are largely large-scale, vertical, and top-down—the Obama Administration should be particularly alert to the repercussions of policy changes on those skews. It should give careful scrutiny to proposed preemption of current opportunities for smaller-scale divergence and

245. Climate Communities are an example of such an entity. See *supra* notes 177–179.

246. See *Clean Cities, About the Program*, U.S. Department of Energy, <http://www1.eere.energy.gov/cleancities/about.html> (last visited Feb. 23, 2011). The Department of Transportation highlights partnerships with smaller-scale governments, but none of them seem to be integrative in the way that this article proposes. U.S. Department of Transportation, DOT Activities and Partnerships: State, Local, and Private Sector, available at <http://climate.dot.gov/policies-legislation-programs/dot-partnerships/state-local-private.html>. The EPA's current state and local climate change and energy program, which replaced the EPA's 2005-09 Clean Energy-Environment state partnership, *Partner Network*, ENVIRONMENTAL PROTECTION AGENCY, available at <http://www.epa.gov/statelocalclimate/state/partner/index.html> (last visited Feb. 23, 2011), also appears to be largely top-down in its approach. See *State and Local Climate and Energy Program*, ENVIRONMENTAL PROTECTION AGENCY, available at <http://www.epa.gov/statelocalclimate/index.html> (last visited Feb. 23, 2011).

seek ways of better involving smaller-scale coalitions' perspectives in its financial incentives for alternative vehicles technology.

B. Land-Use and Transportation Planning (Or, How We Drive Our Cars)



With respect to how we drive, as illustrated by the above diagram, policy efforts skew oppositely than they do with respect to what we drive. Specifically, although the Obama Administration, by virtue of its positionality, still primarily uses top-down mandates and financial incentives, the bulk of legal efforts regarding how we drive are generated and controlled by smaller-scale government due to the structure of land-use planning law in the United States. In practical terms, this structure means that many of the most important diagonal regulatory efforts regarding how we drive in our communities are not those connected with the Obama Administration's federal programs, but rather small-scale, bottom-up, horizontal initiatives among state and local governments.²⁴⁷

As with the previous regulatory category, these trends contain nuance because efforts to influence how we drive have different emphases at larger and smaller-scales. The Obama Administration's large-scale, vertical, top-down efforts, as described above in Part II.B, focus primarily on reworking national transportation policy and infrastructure and on incentivizing innovative state and local programs. For example, it is aiming to link more cities through high speed rail, is funding state and local transit agency's efforts to use alternative energy technology, and is supporting urban circulator projects.²⁴⁸ In contrast, state and local governmental efforts generally focus on planning issues and changing cultural expectations. For instance, smaller-scale governments often work to make urban growth plans more sustainable and to promote and fund creative ride-sharing programs.²⁴⁹ The primary manner in which these sets of policies come to-

247. See *supra* Section III.B.

248. See *supra* notes 63–69 and accompanying text.

249. See, e.g., *supra* notes 216–218.

gether is through efforts to implement federal transportation policy at state and local levels, which, under the Obama Administration, comes substantially through ARRA funded programs.²⁵⁰

The overall skews in this policy area toward the smaller-scale, horizontal, and bottom-up have their advantages. They ensure that the levels of government with the greatest competence to address the policies which most affect how people use their cars—often, land use and planning issues—are able to make the individualized choices which will work in their respective jurisdictions. As Janet Levit and I have explored, Portland and Tulsa both are making strides on reducing emissions, but how that translates in their local contexts differs greatly.²⁵¹

However, as in the technology context, this Article argues for the value of greater balance and integration. Large-scale efforts, like the ones in which the Obama Administration is engaged, help to address the national-level infrastructure concerns and create coordination among local efforts. Moreover, the federal funds are an important part of what allows localities to innovate.²⁵² Further development along both of these lines would help to advance efforts to change the ways in which people use their cars.

More so than in the technology context, the federal government shares the national and international stage with horizontal coalitions of smaller-scale governments. Those entities also work to coordinate efforts among localities and states, as evidenced by agreements among cities, states, and provinces around the world at Copenhagen and those among localities and states in the United States.²⁵³ These dual large-scale efforts suggest possibilities for the Obama Administration's future diagonal strategies, which the coalitions themselves have been requesting: collaborate with them more closely, so that there is better integration between the Administration's federal efforts and the coalitions' smaller-scale efforts.²⁵⁴

This integration may take a variety of forms. Specifically, in expanding such partnerships, the Obama Administration will have options in how much it wants to defer to smaller-scale governmental authorities and coalitions. The Administration may decide that in some instances, more deference is warranted and that in others, it prefers the status quo power balance. However, even if it does not change the balance of power at all through greater delegation, the Obama Administration has an opportunity to create policy integration with respect to how we drive that does not currently exist. As a practical matter, this greater integration would not be

250. See *supra* Part II.B.

251. See Osofsky & Levit, *supra* note 164.

252. See *supra* Part II.B.

253. See Osofsky, *Is Climate Change "International"?*, *supra* note 5; Osofsky, *Multiscalar Governance*, *supra* note 6.

254. See *Open Letter*, *supra* note 152.

difficult to achieve. The Obama Administration has already been giving funds to localities that on many fronts line up with requests of coalitions like Climate Communities, although the greater financial pressure it continues to face has translated into a failure to include requests in the 2011 or 2012 budgets for DOE's Energy Efficiency and Conservation Block Grants or the EPA's Climate Showcase Communities program, both of which include green transportation funding.²⁵⁵ Federal agencies also already work with states, cities, and tribes on these initiatives and consult informally with them a great deal. The Obama Administration could build on all of these existing efforts by creating more opportunities to bring together relevant agencies and subnational coalitions both to help frame how funds are structured and distributed and to plan next steps.

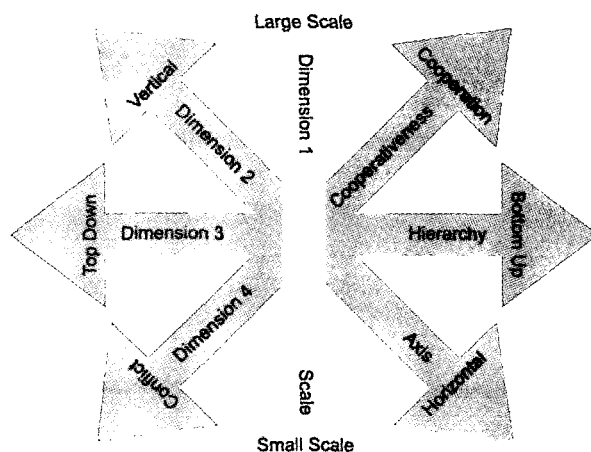
Such vertical integration among key governmental entities at different levels—even if it only involved more informal consultation—would mirror the kind of horizontal integration that the Obama Administration has done by creating the National Program and merging EPA and DOT efforts.²⁵⁶ Namely, it would bring together entities with overlapping policy projects into more collaborative relationships than currently exist. In creating such integration, the Administration would shift the land-use planning and cultural aspects of motor vehicle greenhouse gas regulation from one in which bifurcated skews exist—with the Administration's efforts skewing one way and smaller-scale efforts skewing the other—to one with more balance within each dimension. As discussed above, this balance will help make the federal government a more supportive and integrated partner in local land-use planning efforts intended to reduce vehicle miles traveled.

As with technology-driven standards, the taxonomy can be used in this context as a tool to suggest many different policy approaches. The key contribution it makes is in organizing that conversation. By demonstrating the ways in which current approaches skew within the four dimensions, it can increase the Obama Administration's sensitivity to how it might create greater overall integration and be more responsive to coalitions of leader states and localities.

255. See OFFICE OF MGMT. & BUDGET, EXEC. OFFICE OF THE PRESIDENT, BUDGET OF THE UNITED STATES GOVERNMENT, FISCAL YEAR 2012 APPENDIX (2011); CLIMATE COMMUNITIES, <http://climatecommunities.us/> (last visited Jan. 10, 2011); *Climate Showcase Communities Grants*, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY STATE AND LOCAL CLIMATE AND ENERGY PROGRAM, <http://www.epa.gov/statelocalclimate/local/showcase/> (last visited Jan. 10, 2011); DOE Block Grant Program, *supra* note 75.

256. See *supra* Part II.B.

C. The Ongoing Role of Litigation



Finally, with respect to both types of regulation, the Obama Administration will continue to confront the question of when lawsuits should be allowed. Climate change litigation targets both government regulations and corporate emissions, and as discussed in my preceding companion piece, serves as a mechanism for greater diagonal interaction. Litigation can serve as a game-changer by shifting the skews within each of the dimensions, which is illustrated by the above diagram of the full taxonomy. In my view, this diagonal quality of litigation means that it is a valuable tool to aid in the Obama Administration's efforts to reduce motor vehicle greenhouse gas emissions; litigation needs to be built into regulatory schemes the Obama Administration is creating to allow for different perspectives to be brought into the regulatory process.²⁵⁷

The Obama Administration currently interacts with the regulatory role of litigation in two main contexts. First, and especially because Congress has failed to pass major climate change legislation, more general environmental statutes have become a major locus in the policy dialogue over climate change policy. In the motor vehicle emissions context, litigation has played and continues to play a critical role in helping to frame approaches, as it has provided leader states and cities with a mechanism for pushing for more stringent regulatory standards and more skeptical ones with a mechanism for pushing against those standards. The CAA petition and waiver processes specifically have resulted in an EPA endangerment

257. See Osofsky, *Is Climate Change "International"?*, *supra* note 5.

finding and have helped to provide the basis for the National Program.²⁵⁸ In contrast, lawsuits filed against the EPA's endangerment finding served to express concerns about regulating climate change through that mechanism.²⁵⁹ Even if comprehensive climate change legislation or significant clean energy legislation were to pass, the CAA will likely remain a critical mechanism for motor vehicle greenhouse gas emissions regulation (assuming that legislative and judicial efforts to block that regulation continue to fail), and the processes within it that provide the basis for litigation serve as an important way in which smaller-scale, horizontal coalitions can provide bottom-up input. Litigation has played a critical role both in giving the Obama Administration the needed regulatory authority to address motor vehicle greenhouse gas emissions through the CAA and in illuminating the various views which public and private entities have on what course such regulation should take.

Second, with respect to the comprehensive climate change and energy regulation that failed to pass in Congress, heated debates focused on the extent to which this legislation should both contain mechanisms for litigation and preempt other litigation. In my view, the CAA provides a model for why this legislation, if it ever becomes more politically viable, needs to contain some mechanisms for interested smaller-scale governments, nongovernmental organizations, and individuals to challenge policy choices.²⁶⁰ Such mechanisms make the statute more balanced within the four dimensions by providing a way for smaller-scale entities to work together horizontally and provide a bottom-up challenge to largely federal-level, vertical, top-down decisions. As the CAA context illustrates, these challenges may not always push in the direction of more stringent regulation of motor vehicle greenhouse gas emissions. However, this input from both directions can help the Obama Administration to craft more broadly acceptable policy that moves the dialogue forward.

In addition to the wide range of pending regulatory actions, the Supreme Court's decision to hear a challenge to the Second Circuit opinion that allows climate change public nuisance suits to proceed to the merits, as other circuits continue to grapple with this issue, raises questions about whether legislation or CAA regulation should preempt that mechanism as

258. See *id.* at 616–30.

259. See, e.g., Petition to Review of the Commonwealth of Virginia, *Virginia ex rel Cuccinelli v. EPA* (D.C. Cir. 2010), available at http://www.oag.state.va.us/LEGAL_LEGIS/Court_Filings/Comm%20v%20EPA%20-%20Pet%20to%20Review%202_16_10.pdf; see also Holly Doremus, *Lining up for Endangerment Litigation*, LEGAL PLANET: THE ENVIRONMENTAL LAW AND POLICY BLOG (Feb. 20, 2010), <http://legalplanet.wordpress.com/2010/02/20/lining-up-for-endangerment-litigation/>; *supra* Part II.B.

260. For examples of other scholarship arguing that the CAA provides a model for shaping climate change legislation, see Doremus & Hanemann, *supra* note 223; William W. Buzbee, *Clean Air Act Dynamism and Disappointments: Lessons for Climate Legislation to Prompt Innovation and Discourage Inertia*, 32 WASH. U. J.L. & POL'Y 33 (2010).

well, questions which the Obama Administration has thus far answered in the affirmative.²⁶¹ The brief for the Tennessee Valley Authority submitted by the U.S. Solicitor General's office not only argues for dismissal based on standing and political question grounds, but also claims that the EPA's CAA regulatory efforts displace any federal common-law cause of action.²⁶² This issue is relevant to the motor vehicles context because some of the other public nuisance suits target automobile and oil companies.²⁶³

The Second Circuit's opinion explicitly opened the door to these types of arguments. The opinion, for example, notes in its analysis of the fourth through sixth *Baker v. Carr* factors²⁶⁴ that:

The legislative branch is free to amend the Clean Air Act to regulate carbon dioxide emissions, and the executive branch, by way of the EPA, is free to regulate emissions, assuming its reasoning is not "divorced from the statutory text." Either of these actions would override any decision made by the district court under the federal common law.²⁶⁵

The Obama Administration's brief argues that the new EPA regulations constitute such overriding actions.²⁶⁶

In taking this position, the Obama Administration enters a debate about whether nuisance suits targeting major emitters constitute an appropriate form of complementary regulation. On the one hand, these suits continue an environmental law tradition of nuisance and statutory protec-

261. See *American Elec. Co. Inc v. Connecticut*, 131 S. Ct. 813, 178 L.Ed.2d 530, 79 USLW 3092, 79 USLW 3339, 79 USLW 3342 (U.S. Dec 06, 2010) (NO. 10-174) (granting certiorari); *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309, 323-32 (2d Cir. 2009). Oral arguments are scheduled for April 19, 2011. SUPREME COURT OF THE UNITED STATES ARGUMENT CALENDAR FOR THE SESSION BEGINNING APRIL, 18, 2011, Feb. 7, 2011, *available at* http://www.supremecourt.gov/oral_arguments/argument_calendars/Monthly_Argument_Calendar_2011.pdf. The Fifth Circuit initially issued an opinion with a similar holding, see *Comer v. Murphy Oil USA*, 585 F.3d 855, 879-80 (5th Cir. 2009); however, after voting to rehear the case *en banc*, see *Comer v. Murphy Oil USA*, 598 F.3d 208, 210 (5th Cir. 2010), the Fifth Circuit found, based on multiple recusals, that it lacked a quorum and a majority of the remaining judges then ruled that the appellate decision was therefore vacated. See *Comer v. Murphy Oil USA*, 607 F.3d 1049, 1054-55 (5th Cir. 2010). The plaintiffs petitioned the Supreme Court for a writ of mandamus to address whether the Fifth Circuit has an obligation to render a decision, whether the vacating without a quorum to make a decision was appropriate, and whether the original panel should retain control over the case, but the Supreme Court denied those petitions. *In re Ned Comer, et al.*, No. 10-294, 2011 WL 55857 (U.S. Jan. 10, 2011). In the Ninth Circuit, a climate nuisance case is on appeal following a district court's dismissal of the case on justiciability grounds. See *Native Vill. of Kivalina v. ExxonMobil Corp.*, 663 F. Supp. 2d 863, 873-76 (N.D. Cal. 2009).

262. Brief for the Tennessee Valley Authority in Support of Petitioners on Petition for Writ of Certiorari, *AEP v. Connecticut*, No. 10-174, Aug. 24, 2010.

263. See, e.g., *Kivalina*, 663 F. Supp. 2d 863.

264. See 369 U.S. 186, 217 (1962).

265. *Connecticut*, 582 F.3d at 332 (internal citations omitted) (quoting *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007)).

266. Brief for the Tennessee Valley Authority in Support of Petitioners, *supra* note 262.

tions achieving similar regulatory goals, but, on the other hand, trouble those who think that they produce piecemeal results and that legislation is the proper route for addressing massive crosscutting problems like climate change.²⁶⁷ From the perspective of creating regulatory lability or balancing the above-described skews within the dimensions, however, the nuisance suits have a particularly strong justification. Namely, they provide a mechanism by which smaller-scale actors can work horizontally and in a bottom-up fashion to impact corporate decision-making through a large-scale, top-down federal court decision. Like petition processes within a statute, these suits help to create more balanced policy together with the top-down, vertical statutory approaches. The Obama Administration's decision to take a stand against their continuing may result in cutting off their potential complementary and balancing role in favor of creating a unitary policy through the CAA regulation and any legislation that might pass in the future.

Overall, then, in the context of motor vehicle greenhouse gas emissions regulation, thinking in diagonal federalist terms and applying such taxonomy helps to provide a basis for rethinking regulatory approaches and considering how strategies can be more crosscutting. The taxonomy can be used as a relatively politically neutral tool for getting at the scale problem that bedevils efforts to get at climate change, in general, and motor vehicle greenhouse gas emissions, in particular. While this approach will not solve all of the Obama Administration's challenges, and others might choose to apply it differently than this Part does, it provides an organized framework for identifying gaps and possibilities.

V. CONCLUDING REFLECTIONS ON THE VALUE OF MULTIDIMENSIONAL APPROACHES

Even with an Administration committed to progress on this issue, the crosscutting regulatory problem posed by climate change is daunting. My hope is that a diagonal federalism approach can help make the Obama Administration's ongoing efforts to address climate change more effective, even if it cannot make the problem itself less complex. As the example of motor vehicle emissions regulation demonstrates, the structure of regulatory approaches even within a relatively narrow subject area varies significantly across subissues. An application of the taxonomy across other components of the Obama Administration's climate change policy, such as clean energy and green jobs, can similarly both reveal where skews within

267. For a broader discussion of climate change public nuisance suits and their implications, see David A. Grossman, *Tort-Based Climate Litigation*, in *Adjudicating Climate Change: State, National, and International Approaches* 193 (William C.G. Burns & Hari M. Osofsky eds., 2009).

dimensions are located and help to frame conversations about future directions for policy.

At times, the Administration may deem skews appropriate, particularly in areas where it thinks that federal-level, top-down mandate approaches are preferable. However, even in those areas, as revealed in the motor vehicles example, opportunities abound for creating more interconnection and adding approaches that skew the other way within each dimension. Regardless, conducting such an analysis allows for more informed decision-making as the Obama Administration navigates complexities of scale.

Beyond its practical value in the climate change law and policy context which is the focus of this Article, this multidimensional approach also has the potential to assist in a needed reframing of the environmental federalism literature. Robert Percival explains that environmental federalism debates have traditionally centered on how federal versus state authority should be allocated.²⁶⁸ In recent years, however, numerous scholars have attempted to move beyond this model towards more dynamic ones, as described by Kirsten Engel in *Harnessing the Benefits of Dynamic Federalism in Environmental Law*. Engel explains that such models view the federal government and states as alternative sources of regulatory authority that interact over time, and argues that these approaches address environmental problems more effectively and are truer to the process of policy-making contemplated by our constitutional structure.²⁶⁹

268. See Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141 (1995). For example, an extensive environmental federalism dialogue in the mid-1990s focused on whether federal or state environmental regulation was more likely to lead to a race to the bottom. Compare Kirsten H. Engel, *State Environmental Standard-Setting: Is There a "Race" and Is It "To the Bottom"?*, 48 HASTINGS L.J. 271 (1997) (arguing for federal environmental regulation as valuable), Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570 (1996) (same), Joshua D. Sarnoff, *The Continuing Imperative (but Only from a National Perspective) for Federal Environmental Protection*, 7 DUKE ENVTL. L. & POL'Y F. 225 (1997) (same), and Peter P. Swire, *The Race to Laxity and the Race to Undesirability: Explaining Failures in Competition Among Jurisdictions in Environmental Law*, 14 YALE L. & POL'Y REV. 67 (1996) (same), with Henry N. Butler & Jonathan R. Macey, *Externalities and the Matching Principle: The Case for Reallocating Environmental Regulatory Authority*, 14 YALE L. & POL'Y REV. 23 (1996) (presenting the downside of extensive federal environmental regulation), Richard L. Revesz, *Rehabilitating Interstate Competition: Rethinking the "Race-to-the-Bottom" Rationale for Federal Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992) (same), Richard L. Revesz, *The Race to the Bottom and Federal Environmental Regulation: A Response to Critics*, 82 MINN. L. REV. 535 (1997) (same), and Richard B. Stewart, *Environmental Regulation and International Competitiveness*, 102 YALE L.J. 2039 (1993) (same).

269. See Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159, 176 (2006). For an earlier exploration of dynamic federalism in a corporate law context, see Renee M. Jones, *Dynamic Federalism: Competition, Cooperation and Securities Enforcement*, 11 CONN. INS. L.J. 107 (2004). See also SCHAPIRO, POLYPHONIC FEDERALISM, *supra* note 200; Robert B. Ahdieh, *Dialectical Regulation*, 38 CONN. L. REV. 863, 879–83 (2006); Buzbee, *Asymmetrical Regulation*, *supra* note 227, at 1549–50; Buzbee, *Regulatory Commons*, *supra* note 197, at 49–51; Erwin Chemerinsky, *Empowering States When It Matters: A Different Approach to Preemption*, 69 BROOK. L. REV. 1313, 1328–32 (2004); Resnik, *Law's Migration*, *supra* note 164; Resnik, *Civin & Frueh*, *supra* note 7. See generally Schapiro, *Toward a Theory of Interactive Federalism*, *supra* note

While all of these dynamic approaches to environmental federalism engage core issues raised by a wide range of key actors interacting at multiple levels of government, alternate streams in this literature focus on different aspects of what these interactions entail. As the analysis in Part III of this Article reinforces, the taxonomy highlights major dimensions in which these scholarly discussions take place. Although some articles engage more than one of the dimensions, the taxonomy's framework provides a helpful way of organizing these crosscutting ideas.²⁷⁰

This capacity of the taxonomy to organize environmental federalism debates raises conceptual issues, which my next article in this series will engage in depth. First and most fundamentally, this multidimensional analysis reveals that the environmental federalism literature itself has a particular geography that impacts which issues are covered and how they are discussed. Most environmental federalism scholarship, even in the more dynamic approaches, presumes the ability to treat each level of government as a clearly delineated space is generally limited. As a result, analyses focus on each level's appropriate domain and interaction with other levels in each of the four dimensions.²⁷¹

While such an approach might be appropriate, the geography and ecology literatures contain multiple possibilities for understanding these scales and their interaction with one another. Neil Brenner has summarized a number of the definitions of scale which geographers use: (1) "a nested hierarchy of bounded spaces of differing size;" (2) "the level of geographical resolution at which a given phenomenon is thought of, acted on or studied;" (3) "the geographical organizer and expression of collective social action;" and (4) "the geographical resolution of contradictory processes of competition and cooperation."²⁷² Nathan Sayre has highlighted additional concepts which ecologists bring to an understanding of scale. They often define the two core components of scale as grain, "the finest level of spatial or temporal resolution available within a given data set," and extent, "the size of the study area or the duration of the study."²⁷³ Current environmental federalism analyses generally focus on Brenner's first definition; the scholarship maps the levels interacting as enclosed

228. The *Emory Law Journal* has published two symposia exploring these federalism models, the first of which included the Engel article on dynamic federalism. See Symposium, *Interactive Federalism: Filling the Gaps?*, 56 EMORY L.J. 1 (2006); Symposium, *The New Federalism: Plural Governance in a Decentered World*, 57 EMORY L.J. 1 (2007).

270. For examples of the ways in which environmental federalism debates take place in each dimension, see *supra* notes 153–59, 172–73, 197–201 & 222–28.

271. The environmental federalism approaches described in Part III reflect this conception of scale. See *supra* notes 153–59, 172–73, 197–201 & 222–28.

272. NEIL BRENNER, *NEW STATES SPACES: URBAN GOVERNANCE AND THE RESCALING OF STATEHOOD* 9 (2004) (internal quotations omitted).

273. Nathan F. Sayre, *Ecological and Geographical Scale: Parallels and Potential for Integration*, 29 (3) *PROGRESS HUM. GEOGRAPHY* 276, 281 (2005).

spaces and describes and prescribes their dynamic interactions.²⁷⁴ The existence of these many alternative possibilities to the understanding of scale in the environmental federalism literature opens interesting research questions about how different definitions might change the current scholarly debates.

Second, within the confines of the map provided by the taxonomy and its four dimensions, analyses provide different perspectives on what skews are appropriate when. Scholars debate the comparative value of large- and small-scale climate change regulation; focus on vertical or horizontal dimensions of interactions; propose top-down, bottom-up, or mixed hierarchical schemes; and emphasize conflict or cooperation in the regulatory interactions.²⁷⁵ Just as these skews provide opportunities for reflection in the policy context, they also assist a rethinking of the scholarly literature. The article that follows this one will consider how to evaluate the debates over the appropriateness of skews and ask when different approaches might be balanced or combined.

Specifically, as this Article highlighted, certain contexts, such as motor vehicles' technological development versus usage, lend themselves more towards particular skews in the dimensions. Even if adding balance is often desirable, as analyzed in Part IV, those skews often are grounded in real differences between those contexts.²⁷⁶ Thinking multidimensionally about the environmental federalism debates similarly allows for a comparison of the contexts upon which scholarship focuses and enables an assessment of where true compatibilities and incompatibilities lie.

Finally, both of these inquiries lead to a third inquiry, which brings together this Article's policy focus with the next article's conceptual one. Specifically, both the practical and conceptual applications of the taxonomy reopen questions about the value and limitations of such typologies and the best ways of constructing and assessing them. Thinking multidimensionally provides possibilities for deconstruction and reconstruction, but requires continuous reassessment to make sure that such typologies are using the most effective and appropriate dimensions and applying them appropriately.

This Article focuses on scale, axis, hierarchy, and cooperativeness because these factors represent the primary ways in which multidimensional regulation in this context varies over time. While other dimensions are relevant to the analysis, the ones which I considered adding do not have this quality. For example, change over time is a defining feature of these regulatory dynamics and I considered adding time as a dimension.²⁷⁷ How-

274. For examples, see *supra* notes 153–59, 172–73, 197–201 & 222–28.

275. See *supra* notes 153–59, 172–73, 197–201 & 222–28.

276. See *supra* Part IV.

277. Discussions with J.B. Ruhl provided helpful insights into how time might enter my analysis.

ever, motor vehicle greenhouse gas emissions regulation does not skew towards short- versus long-term or fast versus slow in the same way that it does in the four dimensions that I used.

It is possible that in additional contexts, other dimensions might function more effectively as organizing principles. Even if that is the case, the value of thinking multidimensionally remains similar. By breaking down regulatory and conceptual choices into their elements and considering the benefits and limitations of skews, multidimensional federalism approaches improve the understanding of complex problems and dynamics. Such an enhanced understanding provides the basis for more effective policy and conceptual choices.

